The Australian Apple Review

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Interest 8%

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The Australian Apple Review

The Independent Magazine

July Vol 2 No 5 \$3

The Australian

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Editorial

Software piracy

Software piracy is a topic all Apple users have probably thought about at some time or another. It can be a sore point and certainly one packed with emotion.

I am quite certain not one of us believes the author of a piece of software should be ripped off. Those who have sat down and written code know of the invested hours, the long nights spent following an idea or a concept to the point of it materialising on the screen. Those who have not written but have keyed in code from magazines or books, must also appreciate the writer's effort.

Authors must be rewarded or at best they will cease producing. At worst, the market will see more and more inferior programs and less and less quality.

With that we should have a look at companies such as Lotus. Lotus sell their products and support them with 'hotlines'. For Lotus 123, there are over 50 skilled operators taking calls and solving problems. Further, Lotus channel a good percentage of the profit back into software development, so authors benefit directly.

How much does 123 cost in the US? Through mail order houses, around \$US300 is what you'd pay.

In Australia, Lotus products, including Jazz for the Mac, are distributed by Imagineering. A copy of 123 will set you back over \$A800. Further, calling the Imagineering Lotus information line can be a heart-rending experience both in quality of answer and in just getting on.

I took the opportunity to ask Steven Kahn, the Lotus international marketing manager in Sydney for the launch of Jazz, if such price differences escalated or encouraged software piracy. He answered, "yes" but went on to say that Lotus did not have any say in final retail prices. "All we can do is set our cost price."

Now we have Imagineering joining Lotus and Ashton-Tate in an effort to clean up Hong Kong. Each of the companies is

Crusaders pause outside the Golden Arcade, J. Rich, third from left, appears to be supported by Steve Turner and David Shannon after checking out the prices. Jim Lewis, (obviously overcome by a bargain) takes a pose next to perhaps the greatest entity, Seymour Rubenstein (far right) of Wordstar fame



contributing to a \$100,000 fund to combat the pirates. Yet, of the three companies, only two produce code. Only two are involved in writing and developing new programs. One is merely a wholesaler/retailer.

There are times when I guess I do not see the benefits of exclusive dealerships. And there are times when I guess I see the Australian software buyer as someone contributing twice to a fund to make SE Asia safe for retailers -

once in the cost price of an article and once in the retail price of the same article.

Does this mean I agree with piracy? Definitely not. But I have little sympathy for a little man with a big stick defending profits. I have considerably more for the legitimate user subsidizing all the hoo-ha. And certainly I have the most for the author who is receiving the least and suffering the greatest.





Bits and Bytes

Shaking the apple tree

With Woz gone and Jobs in Europe on a "self imposed exile", the stage was set for some dramatics at Apple Inc. Watchers were not disappointed when a few weeks ago, John Sculley, ex Pepsi boss and now president and chief executive at Apple, announced that over 20 percent of employees would be laid off.

The action has been blamed in part on the downturn in the US personal computer market. Most companies, including IBM, are reeling under the pressures of poor sales. In fact, for Apple this quarter will be the first the company has ever shown a loss. Putting figures to facts, Apple's after tax loss is \$US17 million. Last quarter, the earnings were \$US10 million on sales of \$US435.3 million.

How much does Apple Australia contribute to the overall picture? This quarter, the retail turnover is estimated at \$A30 million. As the locals feel it is "inappropriate" to say exactly what this means in real terms, we are forced to do some quick calculating. Allowing for dollar values, Apple Australia appears to account for less than 5 percent.

Yet, according to David Strong, the managing director of Apple Australia, the subsidiary is "one of the most profitable", and while the others are losing staff, Strong is recruiting.

Poor sales were not the only reason for the shake-up.

About 250 of the over 1200 positions to go were at head office in Cupertino, California. Most were managerial.

On the morning of Friday the 14th of June these people received notice that Friday would be their last day. The notices culminated two weeks of trauma and emotional upheaval that Scully likened to the soap opera dramatics of "Dynasty".

Also closed were three of Apple's six manufacturing plants. Those retained are Fremont, California - Macs and soon //c's, Cork in Ireland and Singapore for keyboards and IIs.

And what of Steve Jobs?

Absent at this critical time, it seems emotional attachments needed to be far from the scene of bloodletting. Although still chairman, Steve Jobs has been relieved of day to day duties, including director of the Macintosh division.



John Sculley with Steve Jobs

Iron Apples

If the American public has lost its taste for Apples, the Soviet public is certainly acquiring it.

The official Soviet policy is to have a million micros in the schools but local production of the AGAT, an Apple copy, is such that the goal will not be realised this century. In order to boost numbers, buying has to be done.

At present there are two ways to go. The first is to the US, approaching bona fide companies. The problem with this direction is the US government's restraints on technological exchange particularly in the area of hi tech. (The US army is a heavy Apple user.)

The second is to the SE Asian and European compatible markets. In Sophia there is a computer show coming up and it is expected that much of what is on show will be finding its way into the Soviet school and other systems.

Compatibility

All new Apple Iles from Singapore will now be sporting the 65C02 chip. This means compatibility to the //c and further steps away from our aging II+es.



and all that Jazz

Last month saw the launch of the latest Lotus offering - Jazz. Jazz is an integrated package for the fat Mac, allowing spreadsheet, database, graphics, wordprocessing and communications.

Unfortunately, Jazz has been a long time in coming almost exclusively because of bugs.

The problem, as Lotus should have seen with Symphony, is that the more parts there are to an integrated package, the more difficult it becomes to use and the greater the chance of bugs sneaking in. With 123 for the IBM, Lotus found exactly the right balance - spreadsheet, database and graphics, with ease of use. 123 has been number 1 on the top sellers list in the US for almost 2 years. With

Bits and bytes

Symphony, a five module program like Jazz, there are problems and a new version is about to be released.

In an era of synthesized music and rock, it may be difficult for Jazz to break through. We can but wait and see.

Computers and the disabled

It may come as a surprise, but much of the equipment used in tertiary institutions comes from the commercial sector rather than government. An example of this was the donation by Otis Elevators of \$6,000 in equipment to the Electrical Engineering faculty of the NSW Institute of Technology.

The donation was of speech synthesis hardware and software for the Apple and some experimental boards. According to Dr Vic Ramsden, deputy head of the school and one of the principals in this area, the equipment will,

- 1. enhance the ability to train students in the use of speech synthesisers with personal computers.
- 2. enable the development of software suitable for visually impaired and non-vocal people.
- 3. enable visually impaired and non-vocal people to attend the laboratory and assess different types of speech quality.
- 4. enable students to study coding methods of speech synthesis.



Dr Vic Ramsden with a student

Speaking of necessities

Lots of new goodies have just been announced by NetComm (Aust). The first is a saving on the II+ and IIe In/Modem hardware with software.

Bundled as Apple Communications Starter Pack, all you require is a II with at least 64K RAM. The In/Modem allows baud rates of 300 full duplex, 1200 half duplex and 1200/75 full duplex. The modem can be set to auto answer, auto dial, auto disconnect, manual dial with auto redial, voice or data mode. The communications protocol card comes with a Z80 processor and on board RAM and can function independently of the 6502

The protocols supported by this piece of machinery are impressive and include IBM 2780/3780, ASCII/ EBCDIC/ EBCDIC TRANSPARENCY, Videotex, full and half duplex synchronous with error check and asynchronous terminal emulation.

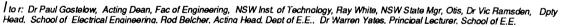
The software is also quite thorough, allowing AUSTPAC compatibility and the ability to save Videotex screens to disk.

For the Mac, NetComm have MacVideotex. This software complements MacTerminal and requires either the standard or the Fat Mac and makes full use of graphics, windowing, icons and mouse interface.



Left: Netcomm's new videotex software for the Macintosh, MacVideotex, showing the Apple Bulletin Board via a videotex service.

Eelow: Netcomm In/Modem running Netcomm's Videotex software.







Australian Apple Review 4

Look who's buying

Ken Guntar must have had quite a surprise when he realised one of his customers last month was Imagineering. What they were shopping for was 'The Mouse Exchange Bulletin Board System'.

Using this bit of software a Mac can be accessed by Macs, other Apples, IBMs or an assortment of terminals for electronic mail, for file distribution or as a public news system protected by up to nine levels of security including visitor access.

At \$99.00, does it work? Sure does, and to prove the point the boys at CompuMusic have set up a Mac doing it all. For those interested, the number is 660-8182, but a modem is a definite necessity.

Taiwan update

'Official' figures have just been released on the Taiwanese computer industry. For 1984, the product and component exports grew to a healthy \$US1.004 billion, representing about 20 percent of total electronics exports. Imports of computer products cost the Taiwanese \$US315 million, an increase in the vicinity of 70 percent over the 1983 figures.

How was the breakdown? In 1984, 683,000 microcomputers were exported (give or take one or two), 900,000 disk drives (up 464 percent) and 2.8 million monitors (worth \$US319 million).

The only section of the market to experience a downturn was the export of components. With the US experiencing a decided slump in the micro industry it is not surprising that export of this commodity is down.

In fact Taiwanese projections see triple digit growth in this industry as normal and certainly assured until the 1990s. Still, the world market for information systems has been tagged at \$US112.3 billion for 1984, making Taiwans legitimate cut of the cake a meagre 0.89 percent.

Now doesn't that make you want to rush out and get a Taiwanese unit just to help the poor fellows along?

Sitting pretty

Sylex, manufacturers of computer furniture have two interesting new products. The first is the Hydraulic Table which will crank up or down to heights form 570mm to 720mm. This allows the top to be at the right height for each user and also means bulky systems do not have to be pulled apart and floored while the table is fiddled with. The handle does fold away so no injurious protrusions will interefere with work.

The hydraulic table sells for around \$995.00 and I am told is available Australia wide.

The second item is more within the budget of the general user. It retails for between \$70 and \$90 depending on the make and size of your printer. Called Le Stand, it is designed to make more space available on the top of your desk, by, well, in this case a picture is worth a thousand words.

Having had a good look at it, I would be more inclined to use the opportunity to put the printer onto the floor, freeing even more desk space. The main reason printers should avoid floors is dust, and with carpet, obstruction of the vents on the underside will build up damaging heat. Off the floor, yet not of the size of a table, this seems quite a convenient piece of equipment.

LE STAND - Vertical Printer Stand from Sylex



New hydraulic table from Sylex



Sunny music

SUN, the Syntauri Users Newsletter, has been around for only a little while but looks like will be around for a long time more. For those not au fait, Syntauri is music for the Apple and subscription to the newsletter costs all of \$10.00 for 12 months.

An interesting item in the issue I have before me concerns ISUG membership.

ISUG is the International Syntauri Users Group, and their means of communication is not by printed matter but by disk. SYNDISK (sounds good) contains news, tips, presets, programs and compositions, and is freely available to members. Alan Todhunter, secretary of the SUN, has arranged membership of ISUG, making SYNDISK to all SUN members.

The disk comes out once a month and will will be posted to members for \$1.00 plus postage plus cost of disk. For more information, write to either Steve Wright, 55 Maxwell St., Mona Vale, NSW or Alan Todhunter, 14 Bennalong St., Granville, NSW.





When the Apple Cooks

Two solutions for baked Apples have crossed the desk in the last few weeks. One is insurance. Sort of life insurance for the item you can no longer live without

Computer Shield is a company set up to sell you just that. To use their own words, "this unique protection provides a combination of service maintenance and insurance cover. The service plan offers four routine maintenance or problem service calls per year to ensure minor problems don't become disasters. In the event of breakdown, malfunction or accidental damage, the insurance element of the policy covers not only the cost of repairs, but also the cost of hire or replacement equipment, including re-keying from duplicate disks or from the previous week's hardcopy."

I guess no one told them you can re-copy your duplicate disks.

Still, it sounds like a good idea, but I'd hate to think of the cost. Those interested can contact Computer Shield in Victoria. Incidentally, I couldn't help but share their promotional photo with you. The one you see is the 'after' shot. In the 'before' shot it was much clearer.

That's right, no water in the vase. And, see the sparks flying out of the vents in the drive?

It must be the first Apple drive in Australia not to have black tape on the inside sealing off those decorative vents. Simply wiping the imaginary water off the drive would have been easier than clutching hair.

The second item concerned where you could go for repairs to your Apple. Control Data Australia are now in their third year of offering maintenance contracts and repair specifically for the Apple range and service facilities I believe are available in each state capital.



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How to make your spreadsheet play?

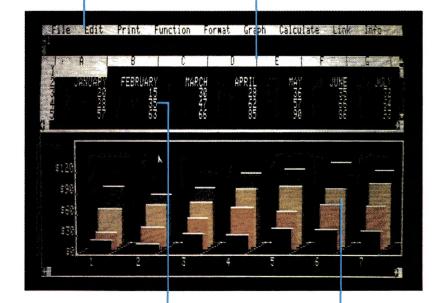


- Introducing Mouse Calc.™ The first integrated spreadsheet/graphics program that gives you the magic of the mouse on your Apple II. Because it's so easy to use, you spend less time learning to use it.
- With Mouse Calc, you're able to project sales, look at forecasts or even arrange a

home budget ... within minutes. Simple pull-down menus eliminate the need for complex commands.

- Click the mouse and get the picture instantly. With Mouse Calc you can quickly change your spreadsheet into a graph... and in color.
- At last there's an exciting business tool that transforms your Apple IIe or Apple IIc into Macintosh. Visit an authorized Apple dealer and try Mouse Calc. You'll see what we've done to make the world's most popular personal computer more exciting than ever.

Pull-down menus contain all the commands you need to control Mouse Cale. If you know how to point, you already know how to select a menu Instead of using cryptic codes to identify spreadsheet cells, Mouse Calc lets you pick a cell (or a block of cells) by simply pointing with the mouse.



Two of the most popular applications for personal computers—spreadsheet and graphics—are combined in a single program. More functionality for the same price.

Crisp color display reall highlights your spreadshed data. By changing a numbe on the spreadsheet, you automatically change the graph as well.

For the Apple IIe and IIc personal computers. Mousecalc is trademark of Version Soft. Apple is a registered trademark of Apple Computer Inc. MacIntosh is a licensed trademark of Apple Computer Inc.

Distributed in Australia by: International Solutions Pty. Limited (02) 319 1488

Laser printers

As far as printers go, 1985 will always be remembered as the year of the Laser printers in Australia.

They have captured the imagination of the masses. People have sold their cars, mortgaged their children and run out dollars in hand to grasp these hitech marvels. And even if they have been unable to get one, the mere mention to others that 'the laser's on its way' causes those lowly owners of daisies, not to mention the unmentionable dot mats, to cringe in shame and embarassment.

Still, while we cringe, we do so knowing we have our printers and they are working. At present I believe there are less than half a dozen LaserWriters in Australia, and the wait may be months not weeks.

So, it was interesting to see the HP (stands for Higher Prices I am told) ThinkJet and LaserJet printers now come in flavours compatible with the Apple.

For //c users, the ThinkJet will provide text/graphics output with high quality. The ThinkJet also works on the Mac, but it is the LaserJet which will doubtless appear more interesting. This comes with with a program called Laserstart which installs the printer drivers onto disks as MacPaint, MacWrite and Microsoft's Word.

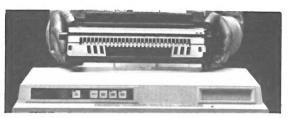
Those interested should contact John Deftereos or Iris Brinkman at Hewlett-Packard in Victoria...

New Nashuas

Macintosh users will now have a little more choice in the type of disk they buy. Nashua have just announced that their 3.5 inch disks are available at all their 'Direct Sales Centres' in each capital city in Australia and in New Zealand.

New Drives

An American computer announced this month that Apple would release a new IIe with 1 megabyte 51/4 inch floppy disk drives. If true, 'twill be a miracle. If not, it is as good a rumour as any.



Left: LaserJet printer - to replenish the ink supply, snap in a new disposable printing cartridge.

Apple Grants

At this month's Computers in Education Conference held in Brisbane, Apple Australia awarded 21 grants valued at over \$100,000, as part of the Apple Education Foundation Awards.

The projects were selected from over several hundred entries, and according to John Barrett, chairman of the Foundation's independent board of advisors, the standard was extremely high. The list is as follows:

Forster High School, NSW, and Centre of Behavioural Studies, UNE, Armidale King Valley Educational Committee, and Caragabal school, NSW Bathurst Gaol, NSW School of Education, Deakin Uni Dept of Psychology, Latrobe Uni Buderim Mountain State School P.E.A.C. Nepean C.A.E. Communication & Lib Stds, Mitchell CAE

Lyneham Primary School

Yarralumla Montessori Pre-School

Hearing Unit, Yarra Valley Anglican School
Regency Park Centre for Young Disabled

Sacred Heart School
Nichols Point Primary
Regency Park Centre for Young Disabled

Dept of Communication, Q.I.T. Nepean C.A.E.

Freshwater High School

Computer aided learning for Aboriginal children

Communication links to overcome rural isolation

Correctional education of prison inmates Microcomputers in primary schools Logic programming for children Data based social studies research Graphics for talented young authors Music literacy skills

History databases

Improving handwriting in children with coordination and perceptual difficulties Logic matrices in early childhood

Computer assisted language learning for hearing impaired pupils
Voice control for disabled

Turtle geometry support material Learn Italian with Apple

Reinforcement and feedback strategies on learning by disabled preschoolers Writers Tone Editor

Non-vocal communication for severely disabled

Writing with talking word processor

Was this an honest mistake or is it a dire comment upon a program, or worse yet, our beloved leader?



MEDIA RELEASE

NEW COMPUTER SOTWARE

PROBES BOB HAWKE

CP/M COLUMN

Dealing with dBase

by Gene Stephan

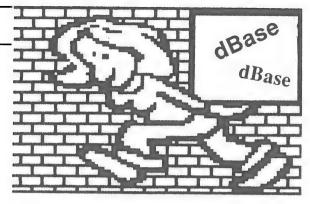
This issue I will look at an alternative method for creating data files for Mailmerge. Although dBase has been quite extensively talked about in many publications, it is well worth mentioning the basics in a small amount of detail. Table 1 gives a summary of a number of commonly used commands.

The first task to tackle is to CREATE the structure of the database. This should be done with some care as subsequent alterations to the structure are messy and better avoided.

As an example we'll take a small business situation - specifically the keeping of customer data to use together with form letters. The business we have is a computer shop (what else!) and with sales in the hundreds per month, we would like to invite people to have their machines serviced free of cost just before the warranty expires. (Well, it is a hypothetical case.) Due to the numbers involved, Australia Post gives us a discount if the mail is pre-sorted.

The structure must include names, addresses and a note on each of the purchases made. So, enter dBase and CREATE:

A>dbase <RET>
.create main
ENTER RECORD STRUCTURE AS FOLLOWS:
FIELD NAME, TYPE, WIDTH, DECIMAL PLACES



I have created two files in order to simplify seeing what is happening to the data. MLIST is identical to MAIN with the exception of the NOTE field.

You may also notice the PCODE field has been made into a character field rather than a numeric. This does not affect the INDEXing or the selection of record by < or >. It does have the advantage of allowing multiple field indexes.

dBase will not allow INDEX on a mix of character and numerically defined fields. In practice, I often leave PCODE fields numeric. The advantage here is in a type of safety check. PCODE should have no character input, so the computer beeps if a letter is inadvertently entered. In such applications, postcode is usually the last field with a width of 4. This makes character errors difficult to detect at the time of data entry.

A large note field is extravagant, and in the case outlined, data could have been entered far more economically under a number of smaller fieldnames. With dBase, space must be watched. In the case of the MAIN file, 204 characters will be stored to disk per record irrespective of whether or not anything more than 1 character is entered.

Now, enter some data into MAIN:

. USE MAIN <RET>

For those uncreative individuals, Figure 1 may be helpful.

001	FIRST,C,15	
002	LAST,C,20	
003	ADDRESS,C,25	
004	SUBURB,C,20	
005	PCODE,C,4	
006	NOTE,C,120	
007		
INPUT DATA NOW? N		

Figure	1				
FIRST	LAST	ADDRESS	SUBURB	PCODE	NOTE
Bill	Brown	1 White St	ULTIMO	2222	purchased Apple
2/3/84					
Joe	Bran	2 White St	ULTIMO	2222	purch //c 3/3/84
Fred	Green	17 Sunny Cres	BOURKE	2444	considered software
Mike	Pink	1 Moon st	CAIRNS	3333	screen & drive 14/5/84
l					

.create mlist

ENTER RECORD STRUCTURE AS FOLLOWS:

FIELD NAME, TYPE, WIDTH, DECIMAL PLACES

001 FIRST,C,15 002 LAST,C,20 003 ADDRESS,C,25 004 SUBURB,C,20 005 PCODE,C,4

006

INPUT DATA NOW? N

Once the files are created and some data entered into MAIN, the good bits begin. The power of dBase lies in the ability to manipulate data under program control. There are two ways to enter dBase code. One is to use MODIFY COMMAND from the dot prompt and the other to enter WS through the N mode.

I prefer going through Wordstar due to the increased number of edit commands. However, using the editor provided is far more convenient as the dBase environment does not need to be left and code can be tried out easily. Either way works and it doesn't matter if you start one way and subsequently change to the other. All that matters is the syntax, and if WS is used

Dealing with dBase CP/M COLUMN

that it be used in the N mode and the file has the .CMD extension.

So to aims:

- 1. Select the data
- 2. Sort the data
- 3. Convert the data into Mailmerge form And the code:
- * file called MMCON
- * for MailMerge CONvert
- * will be on disk as MMCON.CMD
- * getting started with data
- and outputting to b:

ERASE

? 'Working'

SET TALK OFF

SET DEFAULT TO B

USE MLIST

- decide selection criteria
- APPEND FROM MAIN FOR \$(NOTE)="3/84"
- * will select for that date form
- anywhere in the note field

INDEX ON PCODE + LAST TO MDEX

- * the above sorts the records
- * now to create the mailmerge

COPY TO MMLIST DELIMITED WITH, **ENDDO**

Save the program and then from dBase try

. DO MMCONV <RET>

The disk should spin for a while and the computer do an amount of processing. At the end of all the activity, the dot prompt will return. On the data disk, however, two new files will have been created. One should be MDEX.NDX and the other MMLIST.TXT.

To check what happened, enter:

- . USE MLIST
- . LIST PCODE, LAST

00005 2111 Purple

00002 2222 Bran

00001 2222 Brown

Three of the five records were added into MLIST and they are sorted.

You can now enter WS and use the same form of letter as discussed in the last issue. Note only to change the .DF command to .DF MMLIST.TXT.

Next month in the CP/M column I will present some code to automatically find duplicate records in dBase files. Until then, I'll leave you thinking.

Commonly used dBase Syntax

APPEND: command which allows entry of new records.

APPEND FROM: appends records from one file on to the end of the one currently in use.

BROWSE: command which allows edit of several records on the screen at one time.

CLEAR: command which returns dBase to a state comparable to when just booted. All variables released, all files closed.

COPY TO: command to copy a database (file). Can be used for selective copying.

COUNT: will return the number of records in a database. Can be used selectively.

CREATE: command to create a new database (.DBF file)

DELETE: command which marks a record (or range) for deletion. Deleted records appear marked with a * and are not lost until the PACK command is issued.

DISPLAY: displays the current record.

DISPLAY ALL: displays all records pausing every fifteen.

DISPLAY FILES: displays the files on the currently logged drive.

DISPLAY MEMORY: displays the variable names and the space

DISPLAY OFF: displays the records without number.

DISPLAY STRUCTURE: displays the structure of the currently open database.

DO: command used to run a dBase program.

DO WHILE .NOT. EOF: command to continue to process until the end of the file (last record) is reached. Then go to the next instruction.

EDIT: command which allows modification to a specific record.

ERASE: command to clear the screen.

GO BOTTOM/TOP: command which allows to go immediately to the last or the first record.

INDEX ON .. TO: command to create an index file. INDEX ON LAST TO LAST1 will index on the field LAST and create a file LAST1.NDX.

INSERT: command to insert a new record within a file (rather than append to the end).

JOIN: command which allows two similar databases to be joined.

LIST: command to display all records and data. Other form useful to create lists. USE MAIL INDEX LAST1 <RET> .LIST LAST. PCODE<RET>

MODIFY STRUCTURE: command to change the structure of the current database. Use with care as all records are lost. If records are to be saved, COPY first, then MODIFY, and finally APPEND FROM.

PACK: command which irrevocably removes all records marked for deletion

QUIT: command which must be used when exiting dBase. Failure may result in loss of data.

RECALL: command which unDELETES a record.

SET PRINT ON: command to direct the following output to the printer. SET TALK OFF: command to hide results of commands.

SKIP: command to proceed to the next record or as otherwise

STORE: command to store data to a memory variable. Used commonly where a set of macros is being defined. Try STORE 'SET DEFAULT TO B:' TO DR <RET>. Now, when the dot prompt returns try &DR <RET>. The default drive should change to B:.

SUM: sums the values in a numeric field.

COMMUNICATIONS

AT THE TERMINAL: The difference between half and full duplex

by Paul Zabrs

I TTY stands for Teletype, and is the most common standard for terminals. In TTY mode, the characters you type or send automatically when transferring files are sent to the remote computer on a character-by-character basis.

When communicating with a remote computer the software in your Apple can be set up either for half or full duplex operation.

Half duplex operation means that whatever you type is transmitted to the remote computer as well as to your screen.

With full duplex, characters you type are only transmitted to the remote computer. This is best illustrated by a couple of examples.

"Let's assume we want to communicate with a friend's Apple."

Let's assume we want to communicate with a friend's Apple. First, we boot up the appropriate software to convert our Apple into a terminal. Then we ring up our friend and assuming that he is willing and ready, we can start. But before we switch the telephone line to modem, by mutual agreement, one side must be in answer mode and the other in originate mode. If all goes well we can send and receive messages. Every time a key is pressed, the character is sent out to the remote machine and the software also causes it to be displayed on the screen. Although we can see what is being typed, there is no quarantee that the characters are actually being received on the other end.

The situation is somewhat different when we are connected to a mainframe computer. Unlike your friend's micro, most mainframes and many smaller machines echo back characters as soon as they receive them. Under such circumstances every character you type

"To remedy this double character problem simply switch to full duplex operation"

is sent out, received by the remote machine and immediately retransmitted back to you. If you have set half duplex mode each character typed by you appears on the screen twice, the first time when you type it, the second time when the echo is received by your machine.

To remedy this double character problem, simply switch to full duplex operation and everything will be fine. It may be asked why there should be any advantage in characters moving in both direction when in half duplex the same effect can be achieved with less. The answer is in the validation of transmission. For example, if you were to type an "A" and get a "T" echoed back to the screen you would be immediately aware of a glitch in transmission. The loss of a telephone link would be indicated by nothing appearing on the screen, because, obviously, your characters would not be echoed back.

Therefore, if you have a choice, use full duplex. It provides information on the validity of the transmission that half duplex does not. In some cases, e.g. "talking" to a friend as discussed above



I you should choose half duplex because your friend's computer probably will not echo back and even if it did you could not do the same for him as this would result in all the information being sent endlessly back and forth.

If you are unsure of what to do, choose half duplex first. As soon as you see your characters on the screen in duplicate, switch to full duplex.

Full duplex operation provides validation only in one direction, namely from you to the remote computer. What the remote machine sends to you, e.g. the listing of a program, can't be validated in this manner because that information always moves in only one direction. Normally 300 baud asynchronous communications links are very reliable, but that may sometimes not be enough. If we were to transfer banking information, a single incorrect digit could cause a big problem. Therefore several communications protocols have been developed to guarantee with a high degree of probability the integrity of transmitted information.



SOFTWARE

My Office revolutionary program for the Macintosh

by Gareth Powell

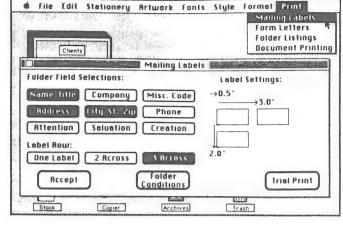
Every now and again a program comes along which takes the personal computer revolution a few steps further. When I first saw *VisiCalc* demonstrated in New York I felt like stout Cortez upon a peak in Darien, because I knew, I knew, this was a revolutionary program destined to affect the future of the personal computer.

And, peace to those I miss out, I felt the same way about *MultiPlan, Switcher, Jazz* and *dBase II.* These are programs that become legends in their own time.

Now another program of this calibre has raised its lovely head.

The program is called *My Office* and I am sure it will do more for the Macintosh than any program released so far. To understand why this is so you need to think how the modern entrepreneur operates. The idea of starting one company and sticking to it through life is anathema to him. Each project, sometimes each sub-project, requires a new company - normally to take advantage of taxation benefits.

The best example I can think of is the Australian film industry, which appears to



form a brand new company for every movie it makes. Nothing in itself wrong with that.

But forming a new company takes time and effort. The legal aspects are not a problem as there are legal firms and accountants who specialise in having shelf companies available which can be purchased for a flat fee and are up and ready to go with minutes, certificates of incorporation, and all the legal junk needed for a new company neatly bound up in a folder. Getting one of these companies and setting it up takes five minutes. Be generous and call it half an hour.

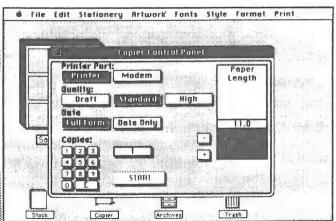
Where the time is taken is in getting together all of the paperwork needed in a modern company. Which is where My Office comes in. The name of the

Mailing Labels Set-up Screen

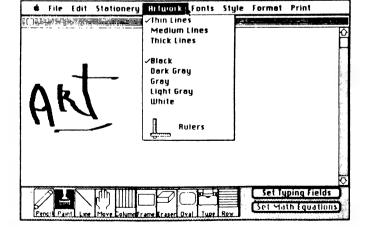
company is already decided by the shelf company that you buy. It is always slightly weird - Ziggurat Investments would be typical if mythical - because they want to make sure it is not duplicated. (This, incidentally is why the Bank of New South Wales changed its name to Westpac, which sounds like something you ask for in a chemist's shop when there is no one there, and lan Phillips decided on the less than lovely name of Zardax for his word processing program. Uniqueness is more important than beauty and appropriateness combined).

My Office allows you to make a few, simple entries and then print out all of the

Right: Artwork Design Mode



Left: the Copier Control Panel



of the stationery that you could possibly need to run your company. And some that you might never have considered necessary.

It even supplies printed stick on labels for guests who are visiting your offices

SOFTWARE REVIEW

My Office

and you want to label like pots of jam so that you can keep an eye on them. (You make think this sort of nonsense is evidence of paranoia but wait until you visit Apple headquarters where you are even escorted to the lavatory).

There is more to *My Office* than this. Far more.

When you are setting out your invoices you can build in all sorts of mathematical equations so they effectively fill

"The net, net result is you can buy an off the shelf company in the morning and have it up and running with all your stationery by the afternoon. And far better, tailor-made stationery than you would ever get from your jobbing printer."

themselves in. Suppose, for one moment, you are selling widgets. A product which is top favourite with fictional maufacturers.

You can enter the word widgets permanently into the invoice. Then, when

the number of widgets sold is typed in, the invoice automatically works out the right discount, add the sales and value added tax, if any, extends the amount into the right column and then does all the adding up.

Speeds up typing invoices by a quantum leap. Does the same for statements as well.

The net, net result is you can buy an off the shelf company in the morning and have it up and running with all your stationery by the afternoon. And far better, tailor-made stationery than you would ever get from your jobbing printer.

To do this you need My Office, a Macintosh and a LaserWriter. I am now coming around to the thought that if you do not have these essential items of equipment you should turn in your

"This is the most revolutionary program I have seen since VisiCalc. I have not yet even started to get to the bottom of all its various possibilities."

entrepreneur's hat and go back to working for the Bank of New South Wales.

If you want to quibble and look for faults in the program - and remember this is the first edition - you can. If you change your mind about how you want an invoice or a document constructed it is far better to go right back to basics with that particular document than plough ahead

trying to modify it to shape.

And, at the moment, the information you produce is not easily tranportable to or from another program.

However, on the horizon is My Accountant which promises to integrate the system even further. Which will mean a company can be up and running with a complete set of stationery and financial accounts within a day. And those books of accounts will be adjusted as the inoices and statements are produced on My Office.

This is the most revolutionary program I have seen since *VisiCalc*. I have not yet even started to get to the bottom of all its various possibilities.

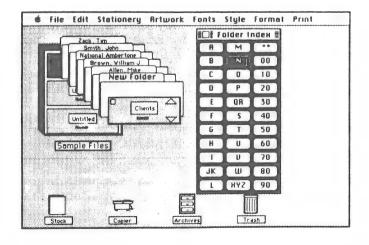
What I will do is wait until My Accountant comes along and then see how fast and well I can set up a company using them both in concert. It will be a practical test and, if the results are what I expect them to be, it will mean the end of a large amount of useless, time-wasting office chores.

Back Copies

There are people who like to collect a full set of every magazine they read. Let us not discourage them for a moment. Our back copy department, under the command of the young and lovely Tina Spathos, has still got some back copies available at \$2 each. We have many of some issues, none of the others and only a few of some titles. These copies may one day become your grandchildren's heirlooms.

Volume 1 Number 1 Volume 1 No 3 Volume 1 Number 4 Volume 1 Number 5 Volume 1 Number 6 Volume 1 Number 7 Volume 1 Number 8 Volume 1 Number 9 Volume 1 Number 10 Volume 2 Number 1 Volume 2 No 3 Volume 2 No 4

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HARDWARE

Applix - CP/M for your Apple

by Gene Stephan

In the April/May issue of the Review, I looked at a board which when plugged into the //c created a CP/M environment. In the same article mention was made of a local product about to hit the streets. Well, now it has and it really is impressive.

The best way to start the review is to compare the two products straight out. This is done in Table 1 (see below).

Installation

The first feature is easy installation. The Cirteck board is difficult to get into the machine. The //c must be opened and the main chip pulled. Then, pushing the card into the socket vacated by the 65C02 requires maximum concentration and a steady hand. When I plugged in the first time, I didn't get it right, but fortunately was quick to rectify. The other point is that opening the case of the //c does nasty things to warranties.

However, once the board is in and working, it can be forgotten. Its function is transparent to the user. DOS and ProDOS disks work as if it does not exist, but when CP/M 2.23 disks are used then they run without modification.

The Applix Z80 expansion does not require the case to be opened. This is one of its greatest strengths. A lead is supplied which plugs the box into the serial port of the //c - simple and convenient with none of the trauma of pulling

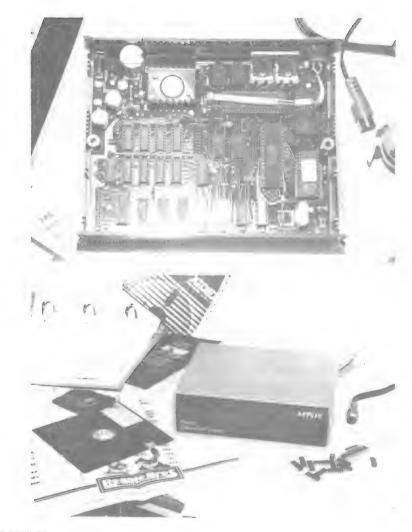


Table 1.

Comparison of Applix CP/M and CirteckCP/M
Feature Cirteck Applix

===============		=========
easy installation	NO	YES
extra RAM	NO	YES
keyboard enhancement	NO	YES
utilities software	NO	YES
parallel printer port	NO	YES
pages in manual	4	74
local product	NO	YES
cost	\$299	\$450~\$E50
=======================================		depending on
		eentiauration

chips. It does however mean the Z80 has to be accessed with a patched CP/M, though the programs necessary are supplied on the utilities disk.

. At this point, some may be a little worried. After all there is only one serial port and that is usually used by a printer. Does this mean no printer with CP/M? Quite the contrary. The Applix box gives you a choice. By hooking one on, you are returned a serial OR a parallel. Access to the parallel is as easy as plugging in a lead.

In fact, under DOS (or CP/M) extra RAM can be used as a printer buffer. Or, a RAM disk which is very handy in the higher RAM configurations (up to 256K). Although I was told the Cirteck system will allow a RAM disk of the //c's 64K not used by CP/M, I am still waiting to see this happen.

Then there are a number of excellent enhancements to the

HARDWARE

Apple environment. In DOS, there is a 12K input buffer and a real-time clock/calendar, though not battery backed-up.

In CP/M, there is a 256 character type-ahead buffer. This means that keys struck while the computer was not ready are remembered and processed when possible - there is no loss of information. And, there is the ability to set the keyboard to click with each keypress. And, the keyboard can be totally redefined if DVORAK or something else is preferred over QWERTY.

Plus, each of the Apple's keys can be defined as a function key, holding a sequence of up to 31 keystrokes. These function keys can be saved as a disk files and different sets loaded for different applications.

Plus, as the CP/M unit is totally independent of the //c, it is possible to switch between DOS and CP/M without loss of information and in fact access 6502 subroutines from within CP/M.

The list continues and unfortunately is too long to include completely. What should be obvious is that this is a product which has been very, very well thought out. The software appears bug free and the hardware does everything the manual says it can do. And the manual does say a thing or two in easy to understand English as well as computerese where the programs are described for those with the desire to modify.

One other worry of the Cirteck board was heat. Although the board functioned perfectly for hours at a time, you were adding over a half a dozen chips into an area already densely packed.

With the Applix box, this problem does not eventuate as it is separate from the computer. To see how it would go, i ran it overnight hooked to a lie by a super serial card - yes, it is not limited to the //c - and it did not miss a beat.

To sum up, I was extremely impressed. It is a very professional system, offering on the one hand ease of use with a multitude of features, while on the other, enough documentation and potential for the seasoned user to extend well beyond the CP/M applications it was designed for with the ile as well as the //c. And, it is totally made and supported in Australia.



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The Business Accountant

2 disks per module 1 disk system manager Regs: Ile or c, DOS 3.3, 2 drives. Cost: \$ 395 per module, except for General Ledger/System Manager which is \$439

It is a rare occurrence for me to be enthused by accounting packages. This issue however has had a business bias and so there's been little choice. The only redeeming factor was the exceptionally high standard of software which has come my way.

A case in point is the 'Business Accountant' software distributed by Ozisoft and available through all their

Last month in the news I lived Ozisoft. Traditionally the strongest local company when it comes to Commodore software, Ozisoft has been virtually tip-toeing into the viciously cut-throat world of the Apple. Fortunately, I think Ozisoft are going to make it, because the products I have seen are all front line.

The Business Accountant is excellent. It comes as a set of five modules which are virtually stand alone. 'Virtually' means that the general ledger module is necessary as it includes the system manager disk, used to boot the system.

General Ledger

Specifications

Maximum number of accounts	500
Length of account description	22 characters
Number of different account types	14
Number of months budgeted per account	12
Number of months history maintained	13
Maximum number of departments	99
Maximum total dollar amount	\$43 000 000
Maximum number of journal entries per month	
floppy, with 100 accounts (no budgeting)	1 930
floppy, with 100 accounts (with budgeting)	1 800
floppy, with 500 accounts (no budgeting)	1 120
floppy, with 500 accounts (with budgeting)	560
hard disk	2.320
Maximum number of accounts per journal entry	99

Maximum amount of each journal Reports:
Account List with Budget Data Account List with history Data Department List List of Recurring Journal Entries Income Statement Budgeted Income Statement Comparative Income Statement Comparative Income Statement Palance Sheet Comparative Balance Sheet Funds Statement Detailed Trail Balance Report Summary Trial Balance Report Summary Trial Balance Report

Maximum amount of each journal entry

Journal Detail Report Account Detail Report

reviewed by Gene Stephan

Does this mean heavy copy protection, complete with disk drives that have to be spot on before the gems will boot? Not at all. The manual encourages you to backup all disks, and COPYA (on your DOS master disk) is the program suggested to do this. What this does is immediately make you feel easier with the software. You know that if by any chance the disk is destroyed another can be put in its place in a few minutes. Such a feeling is great when you are starting out with a brand new program, as it encourages experimentation before any of the serious business data is entered.

To aid the learning process, sample data disks are included and the manuals are very comprehensive both in program description and tutorials.

So, how does it go? I started with the general ledger disks (because I thought if I could get through this I could get through anything) and booted a COPYA copy of the system manager. First surprise - it worked just like it said in the manual. Second surprise - it's Australianized. The date was in a comprehensible form and not in the back to front Yankee mumbo jumbo.

Now I could handle anything. About 60

Accounts Pavable

Specifications.	
Maximum number of vendors	
floppy	500
hard disk, per individual set of vendors	790
hard disk total (8 sets maximum)	6 320
Maximum number of transactions	
floppy with 100 vendors	1,750
floppy, with 500 vendors	740
hard disk per vendor set	2 020
hard disk total (eight sets maximum)	16 160
Number of payment terms	9
Number of characters in vendor code	up to 8
Distribution accounts per transaction	up to 8
Characters in invoice reference	up to 12
Characters in invoice number	up to 8
Maximum amount per transaction	\$999 999 99
Maximum amount of each A Pichech	\$999 999 99
Reports.	

Vendor List
Checks with detailed stubs
Check Register
Handcheck Register
Accounts Payable Detail Report
Summary Aging Report
Invoice Summary Report
Cash Flow Report Payment Selection Report Discount Analysis Report

The Accounting Equation

Although you will not work directly with the accounting equation when you use THE BUSINESS ACCOUNTANT, a basic understanding of the equation is necessary to understand other accounting principles. The basic equation is:

Assets - Liabilities + Canital

Assets — Leathilles + Caphai Assets are all the things a company owns both langible and inlangible Examples of langible assets are cash, furniture, equipment and inventory. Examples of inlangible assets are goodwill, patents, and

vuyngms. Labilities are the debts of the company. Examples of liabilities are accounts payable and notes payable. Capital refers to the contributions of owners or shareholders to the company.

company

The accounting equation states that total assets equal the amounts claimed by precitors, owners and shareholders. In other words, what a business has lassets, is either owned by precitors (fabilities) or investors (owners or shareholders). Earnings are reflected in the capital part of the equation. Earnings can be defined as the difference between revenues and expenses. Revenues are the income produced by the company. Expenses are the amounts spent to produce revenue. Without changing the valicity of the accounting equation, we can revise it to include revenues and expenses.

Assets = Liabilities + Revenues - Expenses + Other Capital

And that equation is equal to the following.

And that equation is equal to the following. Assets + Expenses = Liabitities + Revenue + Other Capital if proper accounting procedures are bitneed, these equations will hold true before and after you record each business transaction. If it were necessary to prepare the accounting equation after recording each business ransactions would ever take place Accounts were devised as an efficient means to record business transactions.

Figure 1

seconds later the program was configured for my system and the Ile was ready to ledger, but there I stopped.

Although keen to play with the figures, I found myself reading the manual. The reason for this unusually strange occurrence was that the introductory chapters don't describe the program, but rather describe accounting procedures and the aims of the packages. I doubt this would be serious competition for any text book, but it does put the software quickly into context. For an accountant these pages would probably be boring for someone about to plunge into debits and credits for the first time they are a

For example, Section 2 is entitled 'Accounting Principles' and page 2.2 is representative. This is included as figure 1.

Accounts Receivable

Specifications:	
Maximum number of customers	
Roppy	500
hard disk, per individual set of co	ustomers 730
hard disk total (8 sets maximum) . 5.840
Maximum number of transactions	
floppy, with 100 customers	2.150
floopy, with 500 customers	790
hard disk, each customer set	2.510
hard disk, total (8 sets maximum	0) 20,000
Number of payment terms	, 20.000
Number of characters in customer	
Line items per invoice	. up to 16
Number of digits in invoice number	·
Number of sales accounts	
Number of customer notes	9 general, 3 dunning
Maximum invoice amounts \$99	
Reports:	
Customer List	Customer Collection Worksheet
Invoices	Invoice Register
Credit Memos	Cash Receipts Register

SOFTWARE REVIEW

The Business Accountant

Having gained some understanding of what I was going to do, the system manager was switched for the general ledger programs and after some seconds of access, the menu appeared as promised.

Security

Before leaving the system manager, I should point out that it does serve some purposes other than simply bringing the system up. For starters, it gives password security with different levels of access. Against people who really want to break in, such systems are virtually useless, however in most cases, and particularly in an office situation, this level of protection is more than adequate.

Next, there is complete choice in what is said on the invoices. This can range from "thank you very kindly for trading with us", all the way to something unkind such as "pay up or else...." if the system finds long-outstanding invoices. The utilities also provide the means to set discount rates, terms, and other information which does not constantly change.

Finally, there is "labels plus' which allows the printing of labels to go with the invoices or cheques.

Getting back to the general ledger

programs, there are some very good points to this software. The main one is that after about two weeks of testing, we were not able to find one bug. All the programs ran as they were meant to.

The tutorials are simple to follow, but more than that, the programs are simple to use. With all entry there is unambiguous prompting and confirmation is required before anything drastic is done. And, if all else fails, there is the manual

Data interchange

All modules are capable of sharing data by way of the general ledger and this reduces time and error associated with re-keying the same information into each module. This unfortunately was a problem with the old Peachtree accounting software. Though very powerful, there were some tradeoffs and in the version I saw, the inability of modules to communicate was the glaring one.

As well as data interchange, module to ledger, there is also the provision to create the DIF type of file. Here data is stored to disks for use with some spreadsheet programs, databases and graphics software such as the old Appleplot. Suddenly the accounting package begins to look like more than just an accounting package.

The same comments can be made about all the modules except Payroll. This was not available at the time the review was written.

The System Utilities Menu

System Utilities is option 7 of THE BUSINESS ACCOUNTANT Main Menu (You can find distalled instructions on how to bring up the Man Menu in Section 4 of the manual) Select System Utilities by entening 7 when the Main Menu appears before you. The System Utilities Menu, a shown on the opposite page, should now appear on your screen. Each option is briefly described below.

- 1. Update Company Informatio

- accross.

 2. Update Posting Table
 If you are using THE BUSINES ACCOUNTANT with the General
 Ledger System as an integrated accounting system, select this
 option to set up or modify your Posting Table.
- 3 Unriete Terms Cortes
 - Select this option to enter or update a list of payment terms and your finance charge information.
- Select this option to set up or modify customer notes for invoices
 - Update Preprinted Forms Control Table
- Select this option to indicate some of the information you want the system to print on your invoices, checks, statements and purchase orders.
- 6. Password Maintenance Select this option to set up or modify your password security system.

Summing up, 'The Business Accountant' is an excellent package. It has a great deal of flexibility, is easy to use and at the same time is very powerful and thorough within its specifications. On the negative side, it is unfortunate some use was not made of the //c's extra memory, as two drives are the minimum configuration and certainly the hard disk is the way to go to squeeze every benefit from the program.

Inventory Control

Specifications.	
Maximum number of parts	
floppy	1 000
hard disk, per individual set of parts	1 200
hard disk total (8 sets maximum)	9 600
Maximum number of transactions	
floopy, with 100 parts	4 400
floppy, with 500 parts	3 030
floopy, with 1,000 parts	1 260
hard disk, per set of inventory parts	4 800
hard disk lotal (8 sets maximum,	38 400
Number of product groups	99
Number of cost-of-goods-sold accounts	8
Maximum on-hand quantity for any part	999 999
Maximum amount of purchase order	\$999 999 99

Reports

Master Parts List Parts Cost List Parts Price List Purchase Orders Physical Inventory Worksheet
Physical Inventory Analysis Report
Stock Status Report
Stock Status Detail Report Stock Status Delair Report Inventory Margin Analysis Report Inventory ABC Analysis Report Inventory Fransaction Register Inventory Francial Summary Report Order Recommendations Report On Order Report Surplus On Order Report Low Stock Report

Payroll

Specifications Supports employees in up to Maximum individual annual earnings. OTD and YTD Job Code Report Job Code Period Activity Report Standard and Overtime Rates Time Card Entries List Payroll Register Paycheck and check stub Check Register W-2 Form W-3 Information Summary Reports: Employee Master List Employee Address List Employee Prione List Employee Summary Report Company Totals Report Courrent Balance Report Posting Report Commission List OTD and YTD Commission Report Commission Period Activity Report Deduction List OTD and YTD Deduction Report Deduction Period Activity Report Job Code List W-2 Form W-3 Information Summary 940 Information Report 941 Information Report Tax Table State Abbreviation List Pageoff Destine Table

Labels Plus

Specifications:

Maximum number of names:	
floppy	1,000
hard disk, per individual set of names	1,000
hard disk total (8 sets maximum)	8,000
Number of characters in ID	
Number of selection keys	. 6
Maximum number of labels across sheet.	. 4
Minimum label width, in characters .	24
Maximum label width, in characters.	72
Minimum tabel height, in lines	
Maximum label height, in lines	24
t intinge.	

Mailing Labels (continuous roll or single sheet) Name and Address Lists Telephone Lists

- · Allows automatic selection of A P vendors, A R customers and Payroll employees, as well as entry of any names you want to include
- · Ability to sort by ID code or zip code
- 8 selection keys allow you to select partial listings based on user defined criteria
- · Option to include area code and phone number

HARDWARE REVIEW

Wordstar with Starcard

by Gene Stephan

Wordstar with Starcard disks, manuals and interface

Regs: Il plus or lle

Cost: \$225

Avail: CompuShack

Still on the hardware trail, another Apple CP/M system was received for review this month. I was in two minds as to whether to review or not, primarily because it constitutes a one-off offer by CompuShack. As it is the purpose of the Apple Review to tell it as it comes, we plugged in and pressed on. However readers should take note that while the comments hold true for the hardware and software, the price may soon vary.

The item up for review is the StarCard with bundled software. There are two flavours. Vanilla is a StarCard with Wordstar and utilities, and chocolate is a StarCard with Wordstar, Mailmerge, Spellstar, Infostar and CalcStar.

So what is a StarCard? In a few words it is a very fancy Z80 board for the Apple II+ or IIe. By fancy, I mean exactly that. On board is 64K RAM, videodrivers to provide a 70 column display and RAM disk facilities in DOS.

This in itself should be tempting enough for anyone considering to plug a Z80 into their Apple. However, it does become sweeter. The price includes original software. In the case of Wordstar, it's Wordstar 3.3 and the CP/M system. Note in this case, all the programs provided on the Softcard CP/M disk are not included. All you get is essentially the system plus the programs listed in fig 1.

For those who are considering the package for business, becoming involved in CP/M may be burdensome and the facility to write programs in Microsoft BASIC or GWBASIC may not be critical. What is included is sufficent to work with and the manual does provide all the information needed to get the

Starcard up and running. For those who want to delve a little deeper into CP/M, there is the Murtha and Waite 'CP/M Primer' included. The book is slightly dated but is still one of the clearest explanations of the system around.

If CP/M system doesn't send tingles of excitement through the veins, the Primer can be left unopened. Not so the StarCard manual. It is definitely necessary reading.

The first chapters guide you through card installation and the CP/M you need to know. From there, it's into the nitty gritty with all the information on how to use the card for defining function keys, modifying drivers, using the RAM as a DOS RAM disk and making an old plus have lower case.

I was most impressed with the product, though I must admit to having seen it before and having been impressed with it then. Now, the price is lower, making it even more impressive.

There are two nuisances with the package. The first is trivial, the second a little less so.

Firstly, the CP/M system used is not the same as for the Softcard. If you had or have that piece of hardware (the original Z80 board and template of

DISK	TRANSIENT COMMAND	FUNCTION
CP/M	ASM	Executes the CP/M 8080 ASseMbler.
Disk	DDT	Executes the CP/M Dynamic
	DUMP	Debugging Tool. Displays the contents of a file in hexadecimal format.
	ED	Executes the CP/M File EDitor
	LOAD	Executes the CP/M Relocating
	PIP	Executes the CP/M Peripheral Interchange Program. (Use PIP to copy files from one disk to another.)
	STAT	Executes the CP/M STATistics
	SUBMIT XSUB ADOSXFER	program. Executes CP/M commands from a file. Used in a SUBMIT file. Executes ADOSXFER StarCard
	COPYFRMT CLRPBUF	utility. Executes COPYFRMT StarCard utility. Executes CLRPBUF StarCard utility.
Utility	CONFIGSV	Executes CONFIGSV StarCard utility.
Disk	DLDRIVER	Used by the StarCard's INSTALL program.*
	INSTALL FUNCTION	Executes INSTALL StarCard utility. Executes FUNCTION StarCard utility.

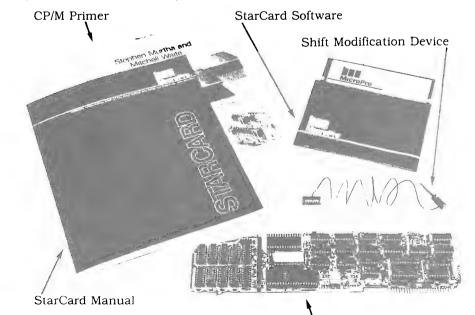
numerous copies) with the software supplied, you will have disks which will not boot with the StarCard. They will work, but the files will need to be transferred - a minor irritation.

The second problem involves power. The card is a monster. If you have a look at the picture and judge the size by the edge connector, you will note it is a trffle larger than anything else you may have plugged in - and with some of the compatibles I have seen, it physically won't fit in.

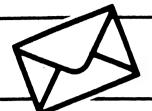
Now, the more you put on a card, the more power the thing will draw from the slot. On my old machine (with an antique power supply), the card wouldn't work - in fact there wasn't even enough power to boot a disk. It can be worrying to hear hissing sounds start coming from the power supply.

On the IIe the power supply is better and we had no worries with the three we tested it with. However, it may mean try before you buy. After all, the Starcard is a computer in itself - it has a CPU, RAM and video ICs - so it's not going to scrimp when it comes to power.

StarCard



Australian Apple Review 18



MAIL ORDER LIST

TOP SELLERS

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DRUM-KEY beat out that rhythm on your Apple



A



by Joe Mancini

When I was asked to review DRUM-KEY I thought maybe I'm the wrong person for the task; I'm not a drummer, I'm not particularly partial to percussion (although I don't mind alliteration or onomatopoeic words) and the gigs I've seen where these devices have been used have been quite unimpressive. You know the kind of bands I mean; those pseudo-intellectual/esoteric one and two piece units who were drifting around Sydney a couple of years ago and those eternal/unfortunate solo country "singer-guitarists" (a la RSL) who still seem to be as abundant as bush flies.

The percussion sound is classic musak; that sterile, repetitive "perfect time" beat which quickly becomes quite monotonous and nauseating. Even the visual aesthetics are, well . . . nothing.

"The package consists of a card, a diskette and a comprehensive 34 page booklet."

With this kind of self-indulgence I held very little hope for the *DRUM-KEY* - until I plugged it into my Apple. My keyboard instantly turned into a drum kit (no, I wasn't expecting a guitar) with almost every key either making a sound or performing some macro-type instruction.

The package consists of a card, a diskette and a comprehensive 34 page booklet. The prerequisites are a computer, an audio system, an imagination and a desire for fun. The card slips into slot 4. A cable connects the line-level input of the audio system (home stereo aux or tape input) to the phono-jack on the DRUM-KEY card. I used a small portable JVC stereosystem. The software runs on Apple DOS.

The system is very friendly, menus/submenus etc and comes with

heaps of demos ready to play. At a superficial level, this is all one needs to start making noise.

DRUM-KEY provides 28 digitally recorded percussion sounds. These are sounds of real instruments that have been recorded, not on tape, but in a

"You need a computer, an audio system, an imagination and a desire for fun."

digital memory chip. Digital recording is the latest development in audio reproduction and achieves the most realistic recreation of live sounds (I read that somewhere). The system allows you to arrange these 28 sounds into any rhythmic structure you like. These structures are referred to as rhythm patterns, or simply Patterns. DRUM-KEYallows you to study and play with its sample of Patterns as a learning exercise or use them as a basis for your own Patterns by editing and adding to them.

Patterns can be created in real-time or in steps. In real-time Record mode, each time you play one of the percussion sounds, it is entered into the pattern at the point where it was played. The result is as if you had played a drum into a tape recorder, except the drum beats are going into the computer's memory, not onto tape. When you play back a Pattern, the computer sends this information to the DRUM-KEY circuit card, exactly reproducing what you played. I found this mode quite difficult to use to achieve a fluent sound even after hours of practice. This did not surprise me however since it was obviously an advanced feature (and even John Bonham would probably have had difficulties). DRUM-KEY quickly came to my assistance here with a number of helpful features. The first feature is called Quantization. This is a form of error-correction which automatically places any out-of-time

drumming on precise, evenly-spaced beats. The amount of error-correction is adjustable to match the requirements of any user, or it can be turned off completely for those adventurous soulds wishing to record exactly what they play. The quantization range goes from 1/1,1/2,1/2T 1/64T, where T indicates triplet timing. The smaller the QUANT setting, the smaller the step size becomes.

Another helpful feature is the ability to build up Patterns by **Overdubbing**. It can be quite difficult (impossible actually in complex structures) to hit all the right sounds at the right times when operating in real-time. Overdubbing allows you to keep adding sounds to a Pattern each time it loops around - if you miss it the first time, you can add it on the next pass and then keep adding to the Pattern if you wish.

Also the Tempo of the Pattern can be slowed down, allowing modifications to be made to the Pattern at a more comfortable pace, then sped back up again for playback. A programmable aduible/visible Metronome helps keep time in all modes. Even with all this help mistakes can still be made, and an Edit mode is included which allows you to carefully step through a Pattern one beat at a time (with the aid of quantization) and delete or insert drum sounds at desired points.

Computers are very good at making things accurate and repetitive, but this may not always be desired. DRUM-KEY uses a feature called **Swing** to give a more human feal to the Pattern by changing the emphasis on each beat.

Patterns can be strung together to creat **Songs**, providing intros, verses, fills and choruses. Songs can be recycled endlessly or looped and connected to other Songs.

DRUM-KEY has quite a number of sounds including hi-hat, accented closed hi-hat, open hi-hat, crash cymbal, ride cymbal, hand claps, accented hand claps, high tom, mid-high tom, low-mid tom, low tom, high conga, low conga, snare drum, accented snare drum, electronic drums 1,2,3,4, electronic sounds 1 and 2 ("far-out"), bass drums, accented bass drums, finger snaps, cowbell, tambourine, rimshot snare and ("puff-puff-sweat-sweat") claves. What we do without the claves?

I found DRUM-KEY quite easy and fun

SOFTWARE REVIEW

DRUM-KEY rhythm on your Apple

to use. We jammed with it for hours and I also used it as an intricate metronome to

assist my guitar playing. I only wish I was able to plug it into a larger sound system. Unfortunately DRUM-KEY has no dynamics or variable volume control to allow say crescendos or pieces of different loudness. The stereo's volume control is the only degree of freedom you get. Also, we could only create one bar Patterns at a time although the screen showed two. For some reason the second bar was inaccessible and the manual was no help in this case. Different tunings of course are out of the question.

I was also upset that a random drum generator was not provided.

No, I don;t think I'll trade my Gibson SG (Angus is God) for a Pearl kit just yet, but I must admit that after a few long sessions on DRUM-KEY (I'm going to patent my drum-roll technique), I couldn't help feeling a bit like Ginger Baker or maybe even Mitch Mitchell!



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Puzzle Page

It seems last month's puzzle was a trifle too easy. Plenty of solutions came and by far the greatest majority appeared correct.

However, there can only be one winner, and one runner up. The winner was Alan Thomas of Hobart, Tasmania, whose solution was the first drawn out of a cardboard box by the lovely Lynne Ryder.

Runner up was B. Joyce of Epping. The reason we thought he warranted special mention was for his line 150. We loved it, but warn anybody trying to key it in not to make a mistake. It's a #&%&! to edit.

Those who win books, particularly runners up, please bear with us. There's a bit of delay in getting the books out. However, they will arrive! Good luck with this month's piece of nastiness.

```
100 HOME
115 FOR N=1001 TO 9999
120 FOR K=1 TO 4
13D A(K)=VAL(MID$(STR$(N),K+1,1))
140 NEXT K
150 B=10*A(1)+A(2):C=10*A(1)+A(3):D=10*A
  (1)+A(4):E=10*A(2)+A(3):F=10*A(2)+A(1):G
   =10*A(2)+A(4):H=10*A(3)+A(2):I=10*A(3)+A
  (1): \cup = 1 \cup *A(3) + A(4): L = 1 \cup *A(4) + A(3): L = 1 \cup *A(4)
(4)+A(3):P=10*A(4)+A(2):M=10*A(4)+A(1)
    ΙF
      B*J=N THEN LPRINT B,J,N
160
    IF B*L=N THEN LPRINT B,L,N
170
   IF C*G=N THEN LPRINT C,G,N
190
       C*P=N THEN LPRINT C,P,N
                    LPRINT
200
       D*E=N THEN
                    LPRINT D.H.N
    IF D*H=N
              THEN
220 IF E*M=N THEN LPRINT E,M,N
230 IF F*J=N THEN LPRINT F,J,N
    ΙF
       F*L=N THEN LPRINT F,L,N
24N
    IF G*I=N THEN LPRINT
250
                           G, I, N
260 IF H*M=N THEN LPRINT H,M,N
270 IF I*P=N THEN LPRINT I,P,N
280 NEXT N
```

```
GOTO 400
         GOTO 400

IF (A1 = C1 OR A1 = C2 OR A1 = C3 OR A1 = C4) AND (A2 = C1 OR A2 = C2 OR A2 = C3 OR A2 = C4) AND (B1 = C1 OR B1 = C2 OR B1 = C4) AND (B2 = C1 OR B2 = C2 OR B2 = C3 OR B2 = C4) GOTO 230
                                                                                                             REM ALAN THOMAS : JUN/85
                                                                                                  GOTO 400
          GOTO 400

FOR W = 1 TO 4

FOR X = 1 TO 4

IF X = W GOTO 380

FOR Y = 1 TO 4

IF Y = X OR Y = W GOTO 370

FOR Z = 1 TO 4

IF Z = Y OR Z = Y OR Z = Y
           FOR Z = 1 TO 4

IF Z = Y OR Z = X OR Z = W GOTO
            360
360

300 Q1$ = MID$ (AB$,W,1)

310 Q2$ = MID$ (AB$,X,1)

320 Q3$ = MID$ (AB$,Y,1)

330 Q4$ = MID$ (AB$,Z,1)
            ...→ ベ MID$ (AB$,Z,1)
Q = VAL (QI$ + Q2$ + ಭರ$ + Q
4$)
4%)
350 IF Q = C THEN PRINT A;" * "
;B;" = ";C: GOTO 400
360 NEXT Z
270 NEXT Y
 380
          NEST W.
NEST B.A: END
```

Quartet - another good integrated program for the Macintosh

by Gareth Powell

Integration is now the in-word. Those of use who used to march in America chanting "Two, four, six, eight, when are we going to integrate?" and got beaten up by the police for our pains, think of integration as a battle not yet wholly won.

In computer terms it is something else again.

It is the assembling together of a series of disparate programs so they all work as one, within reason, and all use the same commands, again within reason.

With IBM machines they have become a flood, a deluge, ever since Lotus 1-2-3 went out there and made millionaires of its boosters. A long chain of integrated programs working from MS-DOS came down the pike and it is truly a gamble as to which of them will survive. Perhaps three or four.

The craze for integrated programs

"The assembling together of a series of disparate programs so they all work as one, within reason, and all use the same commands, again within reason."

spread to Apple and for the Apple Ile *AppleWorks* is quite the article, providing you have the memory to spare. I've used it a lot and I like it.

Now, the Macintosh is begining, at long last, to excite the attention of the business world and integrated programs are popping up all over the place. First cab off the rank was *Jazz*, a direct lineal descendant of *Lotus 1-2-3* which had its

launch sensibly delayed to have all the bugs worked out of the system. I am now assured by people whose judgement I respect the program is now effectually

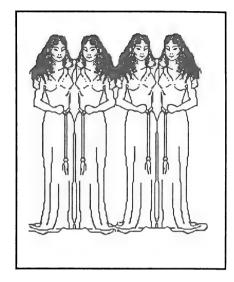
"Programmers who worked within tight code to make an integrated program which will work within the confines of a 128K Macintosh."

bugless, but it is not cheap and it has not been met throughout the world with the fervour that was accorded *Lotus 1-2-3*.

This is perhaps because the public is getting more blase.

Or because there are other integrated programs around to compete.

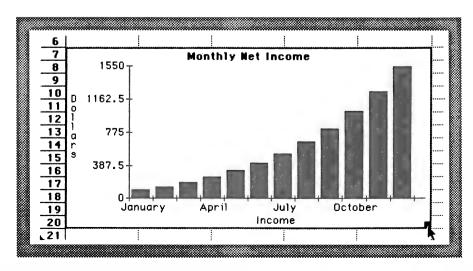
I have now been playing with a new entry in the Macintosh integrated program stakes, Haba Systems *Quartet*, for some time now and it is a program for which I will have a lot of good things to



say. First, let me take my hat off to the programmers who worked within tight code to make an integrated program which will work within the confines of a 128K Macintosh. There may not be many people around anymore with a non-fat Mac but the point is by keeping within reasonable boundaries the bright people at Haba have allowed us room to breathe.

As the program now stands you work everything within what is left of memory all data is contained there - which on a fat Mac is more than somewhat. To do this the programmers have had to write their own file handling routines so you need to be careful initially you don't wipe work through inexperience.

But this is the first version of *Quartet* and there is no doubt it could be modified with no big drama to access all the data it needs from a second disk drive.



SOFTWARE REVIEW

Quartet another Macintosh goodie

In that I believe the day of the thin Mac is well past, so I believe that anyone buying a Macintosh needs to get it with an external disk drive to maximise their

"I can see some bright packagers playing around with this concept until we eventually end up with something which will, effectively, be *Lotus 1-2-3-4-5-6-7*. Which will put a complete end to disk switching."

investment. With the extra disk drives all sorts of jolly times become possible.

As an experiment I combined "Quartet" with "Switcher", the yet to be released Apple program that allows several programs to be co-resident in the Macintosh at once. It worked like a dream and I can see some bright packagers playing around with this concept until we eventually end up with something which will, effectively, be Lotus 1-2-3-4-5-6-7. Which will put a complete end to disk switching. Which is the name of the game.

Quartet, according to Haba, is a "fully integrated business application featuring spreadsheet, graphics, database and annotating functions." I like the phrase annotating functions. What it means is the word processing function simply isn't powerful enough to be called a word processor. So it becomes an annotator instead.

The spreadsheet is powerful enough and big enough for most users. It runs 62 by 999 cells but, small snag here, you could only possibly use all of them on a Macintosh XL (grab one before they are all sold out) with a full megabyte of Random Access Memory. Otherwise you

"This is simply no hassle unless you are the financial controller of BHP in which case you shouldn't be using this program in the first place."

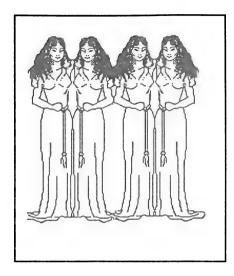
will have to be content with something a a little smaller.

This is simply no hassle unless you are the financial controller of BHP in which case you shouldn't be using this program in the first place.

It contains most of the standard spreadsheet functions and as I have yet to meet anyone who uses all of them - or even understands clearly what they do the program appears more than sophisticated enough for normal, or even abnormal, use.

There is one unusual function called TODAY which updates, say, interest payments you have entered into your spreadsheet by checking back on the built-in Macintosh clock to see what the date is. Neat.

Another big plus is the ability to combine collections (clusters?) of cells into one block and designate it a text area in which you can write a description

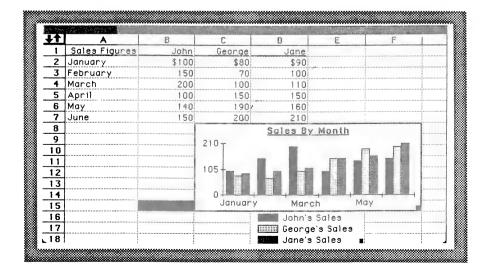


of exactly what the hell you are trying to do with all those figures.

You are therefore understandably

"If you need more space and words than this to explain your spreadsheet then it may be your spreadsheet is not, in itself, a model of clarity."

restricted to the normal size of the Macintosh screen or 1,000 characters, whichever is the smaller.



SOFTWARE REVIEW

Quartet another Macintosh goodie

If you need more space and words than this to explain your spreadsheet then it may be your spreadsheet is not, in itself, a model of clarity.

To edit this text you use their "annotator" which is fairly restricted but quite manageable. It operates in a Macintosh manner and is about as powerful as MockWrite.

You can't, for example, start messing around with founts and styles or type size. I find this no great hassle as spreadsheets are working papers, not advertising agency presentations.

With Quartet, not only can you convert your figures into a seies of elegant looking and easy to understand graphs but you can incorporate them right there in the spreadsheet area which, if you use a little forethought, makes the spreadsheet double easy to understand.

There are three types of graph you can use, pie, bar and line and, before you ask, yes the pie chart circle does look a little on the jagged side. Now we come to the fascinating bits. If you have set up a graph which represents what is happening between two points on your spreadsheet - what Quartet call a range then any changes you make to those figures is immediately and automatically reflected in the graph.

Beat that for a trick.

It is not possible to paste a graph into your Scrapbook or Notepad and move it into another application. Which is why I said earlier that some forethought is required.

If you need to move your graph then you will have to do a screen dump and use MacPaint to convert it into the form you need. (I tried this by combining MacPaint with Quartet through the Switcher and it worked first time. Of course, I had lost some of my working memory through doing this but as I was

only playing with a medium sized spreadsheet this was not a major problem.)

Like many other programs that claim they have a database, Quartet, in truth, doesn't have one.

What it has is a spreadsheet into which data can be entered and then manipulated as if it were a database. This is not a fine distinction. It is an important one.

If anyone tries to tell you these programs contain true interactive data bases they are telling you a lot of little porkies. However, within those limitations its spreadsheet/database works very well and allows you to do most of the sort procedures - but only up to two levels at once.

Which means you may have to run it through the mangle two or three times to separate the data you want. As the process is truly point and click with the ubiquitous mouse this is absolulutely no hassle. It doesn't make it into a true integrated database by a country kilometre - but it is very workable.

Now we come to the crowning gem of the whole program.

The documentation.

I am quite enthralled with *Quartet* because the documentation is a model of clarity and intelligence. The manual was written by Jane Friedman who should come up to centre stage and take a great big bow in the spotlight. After having suffered through some of the worst manuals known to man using some

" I am quite enthralled with *Quartet* because the documentation is a model of clarity and intelligence. "

Japanese hardware, working my way through *Quartet* following Jane Friedman's lucid prose and well thought out examples was like a holiday.

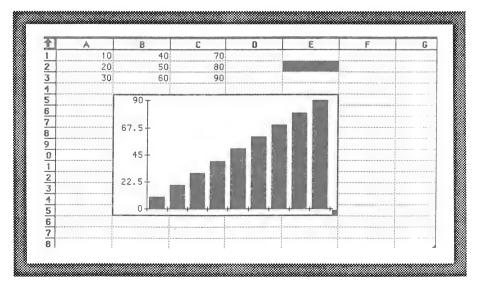
If you think you need an integrated program and you are not into heavy number crunching it may well be *Quartet* is the program for you.

In a sense it is what the Macintosh is all about. Simple, easy to use and understand - and without any unecessary frills.

Winston Churchill once said cuttingly about the Labour Prime minister Clement Atlee "He is a modest little man with much to be modest about".

Quartet is a modest program with much to be proud about.

l like it.



Slip away to the fairway

reviewed by Gene Stephan

Pro Golf: Interactive 1-4 player game

1 disk

1 30 page instruction book

1 quick reference card Reqa: 48K, plus, e or c, DOS

Cost: \$

Available: Beagle CS Distributed: OziSoft

Having been highly impressed with last month's Murder by the Dozen, I did not expect miracles in terms of multiplayer games. Yet, there it was waiting for me one afternoon when I ducked into the office to unburden my desk a little. After opening the box, the rest of the afternoon seemed to slip away on the fairway - all in the line of work of course.

Now, I must make one thing clear. I really hate real golf. But Pro Golf is computer game all the way. Not arcade by a long shot but a bit of strategy plus a bit of luck.

The game is played over 18 holes. If there are two golfers this represents an investment of at least four hours. So, there are shorter game alternatives - the front 9 or the back 9 or to practise a single hole. A two player game of 9 holes takes a couple of hours - not too long to tackle in an evening particularly if you don't want to do anything too strenuous.

The game consists of hitting a ball around the course and into the hole with the aim of completing this task in the least number of hits. Sound familiar? The type of club, the ferocity of the swing and the direction are all controlled by the player. The course remains the same for the life of the disk and is made up of what a bod by the name of Tom Weiskopf (mate of Jack Nicklaus) considers the

top 18 holes in the world. The computer generates several random parameters.

The first of these is the occasional mis-hit. Most annoying, but I am told that as progress is made from amateur up, the mis-hits decrease. The second is the weather. There is wind of varying direction and speed (displayed) and there is rain which can make the ground soggy underfoot and slow the ball while

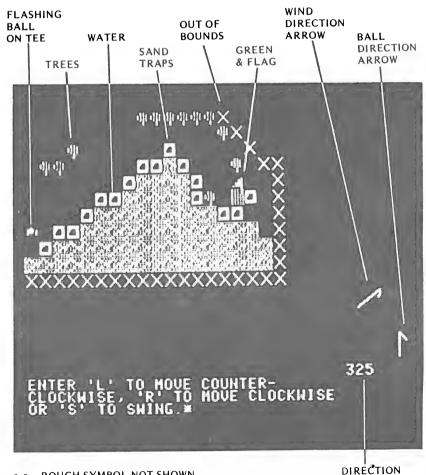
underfoot and slow the ball while putting or merely slashing.

The position from where you tee off also changes with each game. This provides a program which does not play the same way twice. Very fortunate since the computer handles one other piece of housekeeping - the wagers. The game can't be 'learnt' from the point that someone may know a 3 iron at 117 degrees and strength 34.8 will land directly in the hole. All players start more or less equal (practice definitely helps) and the electronic money does not have to flow in the one direction.

To just give a little more detail I'll quote from the manual about putting on the green. "A ball rolling up a slope slows down. A ball rolling down a slope speeds up. The ball will gain, lose speed and

THE HOLE LAYOUT

DEGREES



GAME

break, depending upon the direction it is going when rolling across the contour lines. To enter the strength of the putt choose a number from 0.1 to 60. The higher the number, the farther the ball will travel. On a medium green, the ball will move about 7 feet for each whole number entered. ... A fast green will move the ball up to 16.5 feet and a slow green as little as 4.5 feet for each whole number entered." Only problem is you may not have the distance displayed on your screen, and the above distances are approximate, and the people you play with may object to you using a calculator before each shot.

Finally, I must say I was very impressed. This is a great multiplayer or even single player game. Not an excessive amount of thinking is required, yet you are not expected to moronically kill aliens appearing on your screen. And, in a family situation, everybody can join in and play for skins.



Tom Weiskopf's PRO CADDY CARD

Hole Symbols

Ш

Rough



Tree



Sand trap



Water (blue & white)



Putting green (green)
Flag (On putting green)



Out of bounds



Fairway (blank area)

Green Symbols



Contour line

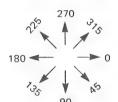


Hole



) Ball

Degree Chart



Club Codes and Ratings

Club	Code	*Pro	*Amateur	*Beginner
Driver	DR or 1W	280	252	227
2 Wood	2W	265	239	222
3 Wood	3W	250	225	203
4 Wood	4W	235	212	191
1 Iron	1 or 11	235	212	191
2 Iron	2 or 21	220	198	178
3 Iron	3 or 31	205	185	166
4 Iron	4 or 41	190	171	154
5 Iron	5 or 51	175	158	142
6 Iron	6 or 61	160	144	130
7 Iron	7 or 71	145	131	118
8 Iron	8 or 81	130	117	105
9 Iron	9 or 91	115	104	93
Wedge	WE	110	99	89

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POSTAGE PAID

Derrière Firmer

Place hands on chair, feet flat on the floor, and lift your hips and buttocks up. Tighten your buttocks. Hold for five seconds, then sit back and relax. Repeat twice. Benefit — to firm and tone your legs and buttocks.



TONE UP AT THE TERMINALS

NEW APPLE IIc SOFTWARE AVAILABLE IN AUSTRALIA (In addition to more than 10,000 II+ and IIe programs that will also run on the IIc)

<u>NAME</u>	<u>CATEGORY</u>	<u>RRP</u>
Access II	Comms Utility	\$95
AppleWorks	Spreadsheet	\$333
11	Word Processor	ĺ
	Database	
Bank St Writer (Home)	Word Processor	\$100
Bank St Writer (School)	Word Processor	\$125
Crypto Cube `	Entertainment	\$60
Educ. Classics	Education	\$29
Fact & Fiction Toolkit	Education	\$60
FlashCalc	Spreadsheet	\$199
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- 1. DISK IIc Adds 143K of on-line storage and makes backup easier.
- 2. APPLEMOUSE Features the same pointing mechanism developed for the Lisa and Macintosh computers. Comes with MousePaint, a creative graphics package utilising the Mouse.
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- 5. IMAGEWRITER PRINTER Intergrates high-speed printing capability (120 characters per second) with low-noise convenience.
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C for the Macintosh - five systems

by Michael Connick and Gary Eveson

This review was supplied to Australian Apple Review by Ken Guntar of CompuMusic. It is taken from a magazine they are distributing called the C Journal. This review has been allowed to be reprinted here by the publisher InfoPro Systems, PO Box 849, DENVILLE, NJ 07834 USA. Additional information on Aztec C was added by Gary Evessen, a programmer from BrainWare.

Michael Connick develops commercial software in C on a Mac and he is the author of Mouse Exchange BBS also available from CompuMusic.

The Apple Macintosh is a revolutionary system in the PC marketplace. Introduced in January of 1984, its impact in the personal computing field is just beginning to be felt. Based on the Motorola 68000 16-bit microprocessor (that is capable of addressing

"Its innovative use of windows, icons, pull-down menus, graphics and a mouse provide a poweful, yet friendly user interface. Many of the features of first introduced on the Mac are now being incorporated into other personal computers."

12 megabytes of RAM), it provides considerable processing power while occupying little disk space and yet more than twice as powerful as the standard MS-DOS/PC-DOS machine.

Its innovative use of windows, icons, pull-down menus, graphics and a mouse provide a powerful, yet friendly, user interface

"Fortunately, this expensive and cumbersome environment was short-lived when in late 1984, the first native compilers for the Mac became available."

Many of the features first introduced on the Mac are now being incorporated into other personal computers.

Like most new machines, the Mac suffered from an initial lack of software development tools and hence applications.

Originally, Mac software could only be developed on a host Lisa in Lisa Pascal or Assembler. Fortunately, this expensive and cumbersome environment was short-lived when in late 1984, the first native compilers for the Mac became available.

Mac compilers now exist for Fortran, Pascal, Forth, Lisp, Modula-2 and C. Of these languages, C appears to be the most popular with development systems being available from five different vendors. In this article we will review these systems and in particular will comment on their use of the unique Mac environment, the Toolbox.

The Mac Toolbox is implemented in 64k of ROM and contains extremely optimized code. It is the heart of the Mac operating system and it provides over 400 functions to support I/O, memory management, menus, windows, desk accessories and utility functions. Any program that desires to take advantage of the standard Mac user interface must be able to access the Toolbox routines.

The Toolbox routines were originally written to support Lisa Pascal and hence present some unique problems to the C compiler writer attempting to support an efficient interface to them. The primary problems relate to string storage and function argument passing conventions. In Pascal, strings are stored with a leading length byte thus limiting the maximum size of strings. Each time strings are passed to and from a Toolbox routine, they must be converted to/from the Pascal format. The argument passing convention using in Pascal is the opposite to that used in C so again, some pre and post-processing may be necessary.

Another unique feature is the concept of "resources". Resources can be used to define windows, menus, icons and even text strings. They can be created

"The Toolbox routines were originally written to support Lisa Pascal and hence present some unique problems to the C compiler writer attempting to support an efficient interface to them."

and changed independently from a program and the program's source code is not required. Apple provides a program called RMaker which binds resources into a user program. Resources can provide a program with tremendous flexibility by allowing its user interface to be changed without requiring recompilation.

Incidently, anyone attempting to do any serious development work on the Mac should buy the book *Inside Macintosh*. This 800 page tome provides complete

PROGRAMMING

C-a system for development

documentation on all the Toolbox routines.

The products

The five C development systems reviewed were Aztec C68K-c (the commercial version), Hippo C - Level 1, Mac C, Magamax C and Softworks C.

Each system provides a unique software development environment and each has its own advantages and disadvantages. They range in price from US\$149.95 to US\$499.00 and they differ greatly in their approach to providing a native Macintosh development environment.

All packages will operate on a 128k Mac with two disk drives. While several are theoretically capable of operating on a single drive Mac, the amount of disk swapping may make this impractical.

All of the compilers provide at least a minimal implementation of the "standard C library" as well as libraries and header files for interfacing to the Mac toolbox.

Aztec C68K-c is a port of the Aztec compiler currently available for MS/PC-DOS, Apple II, PDP-11 (under UNIX), CP/M and soon available on VAX, Commodore 64, the Omega and Apple ProDOS.

It also contains a library providing complete support for all Mac Toolbox routines. It is unique among the compilers reviewed in that it does not run under the normal Macintosh user environment, but rather operates under a UNIX-like SHELL.

Aztec C provides two editors - a mouse driven editor and an editor similar to the Berkeley UNIX vi editor. A RAM disk is provided, as well as a compiler, assembler, a linker, a library manager and many support utilities (such

as MAKE, GREP & DIFF) derived from the UNIX environment.

Some standard programs from Apple are also included. These include the Apple Macintosh Development System (MDS) editor, RMaker and Macsbug Debugger. A new Rmaker written by MANX is also provided because MDS is not good enough. Aztec C is capable of producing programs which will operate the SHELL (and hence the source is able to be ported to other operating systems) or in the standard Mac environment.

Hippo C-Level 1 does not generate 68000 machine code directly. Instead it generates "pseudo code" (or p-code) which is then interpreted at run-time. As with most p-code systems, this results in some trade-offs in program size, compile time, and execution speed.

Numerous run-time debugging commands are available and the p-code generated appears to be quite compact. Hippo C includes a program editor, some UNIX-like functions and support for approximately 380 of the Toolbox

"As with most p-code systems, this results in some trade-offs in program size, compile time, and execution speeds."

routines. Hippo C-Level 2 will apparently generate machine code but this version was not available at review time.

Mac C generates assembler code which is then input to the Apple MDS assembler to generate 68000 machine code. Since MDS had not been released by Apple at the time of this review, Mac C provides a pre-release version of it. The MDS also contains an editor, a linker, assembler equate files for interfacing to the Toolbox, Macsbug debugger and the RMaker program for creating resources. The MDS editor is needed to create and edit Mac C programs.

Mac C currently does not support floating point variables although this is planned for in a future release. (See Additional Information below). Mac C does not support register variables. The compiler includes a complete Toolbox interface library.

A Mac C Toolkit is also included, which consists of an extensive library of other Macintosh routines. These routines include support for file I/O, string handling, memory management, TTY simulation, serial port I/O and keyboard I/O. All of the Mac C library and Toolkit routines are provided in both source and object form.

Megamax C generates object code directly using its own built in assembler. A linker, a library manager, a disassembler and a code optimizer are also provided as is a complete library of Toolbox routines. The Apple MDS editor and RMaker programs are included.

Softworks C is a port of the Whitesmiths C compiler currently available on CP/M and MS/PCDOS systems. It consists of a three pass compiler and libraries for interfacing to the Mac Toolbox. A pre-release version of the complete MDS.

Documentation

Aztec C has one fat boxed binder that provides the most voluminous documentation of all the systems. It is written in a tutorial manner and each section contains numerous examples.

There is even an extensive eight page description of one of the example programs included on the distribution kit: a desk accessory for displaying the contents of RAM.

The SHELL commands and utility programs are completely described in a manner quite similar to UNIX manuals. The SHELL tutorial alone is 48 pages. While the documentation is well done it is surprisingly lacking an index and table of contents. Fortunately, each section contains a title in bold print in the upper right hand corner of each page.

Hippo C also offers excellent documentation, particularly for the novice C programmer. It consists of a compact single binder containing 3 major sections: "Getting Started", "Advanced Topics" and appendices. The manual is well written and contains numerous examples but no index is provided. An extensive on-line tutorial is available

C - a system for development

as part of the package.

Mac C's documentation consists of a small spiral bound manual and a photocopy of the Apple MDS manual. The C manual is definitely not written for the beginning C programmer. All of the information necessary for using this product is included in the manual, but it is written in an extremely terse manner and contains no examples. Again, no index is pprovided.

The Megamax C documentation comes in a single binder. It is also written in a very terse manner and contains no

"All of the information necessary for using this product is included in the manual, but it is written in an extremely terse manner and contains no examples."

examples although it is a little more detailed than the Mac C manual. It contains an index, but unfortunately has no listing or explanation of compiler generated error messages.

The Softworks C consists solely of the Whitesmiths' C "generic" manual and a few additional loose pages. Since the Whitesmiths' manual is written to support its compiler on many different systems, it makes no mention of the Macintosh or its Toolbox, and in fact contains the description of many commands not available in the Softworks C implementation. One of the loose pages identifies the sections in the Whitesmiths' manual which should be

referred to.

Installation

Aztec C consists of 3 disks. Disk 1 is a bootable disk which automatically puts the user into the SHELL operating system. It also contains the assembler, compiler, linker, Z editor, libraries and header files. Disk 2 contains the sources of the library files, utility programs and their source code, two example programs, a simple terminal program with source and a RAM disk program with source code. (The RAM disk is only usable with the 512K Macintosh).

Disk 3 contains the MDS editor, RMaker, four varieties of Macintosh debuggers and a Lisa debugging program. Disks 1 and 2 of Aztec C are quite full and while no explicit installation instructions are given, the user will probably want to copy some of the files onto another disk.

Hippo C comes with two identical bootable disks. Since this program is copy-protected one of the disks provides a backup copy. The disks contain a compiler, assembler, linker, on-line debugger, editor, on-line tutorial and seven sample programs. The user is advised to copy the on-line tutorial files onto another disk to create enough room for program development.

Mac C is delivered on 3 disks. Disk 1 is bootable and contains the compiler, MDS editor, assembler and linker, and a program called EXEC, which allows the user to run batch jobs from a command file. Disk 2 contains the standard library files, header files, Toolkit routines and 2 demo programs. Source code is included for the library and Toolkit routines. Disk 3 contains the RMaker, a program called PackSyms, two sample assembler programs and assembler quate and macro definition files.

The PackSyms allows equate files to be compressed to conserve memory. The documentation includes a sheet of instructions which comprises the installation procedure.

This involves splitting up the files contained on Disk 2 into two new disks to allow space for development.

ХX

Megamax C comes on a single disk which is not bootable. This disk contains the compiler, linker, code optimizer, RMaker, MDS editor, disassembler, library, librarian program, header files and four sample programs. Megamax suggests an installation procedure of copying the code optimizer, librarian, RMaker, disassembler and sample programs onto a separate disk, and copying the Macintosh FINDER program onto the original disk to make it bootable.

The Softworks C kit contains four disks. Disk 1 is bootable and contains the MDS editor, the three programs making up the 3-pass compiler, header files, four sample programs and the source code for one of the library files. Disk 2 contains the MDS assembler and linker, RMaker, libraries and a sample assembler program. Disk 3 contains PackSyms, the rest of the library source code, assembler equate and macro definition and two more sample C programs. Disk 4 contains five text documenting the supported Mac Toolbox routines. No explicit installation procedure is given for Softworks C, but the user will probably want to copy the 4 sample programs and library source code to another disk. The Softworks C compiler requires that programs being compiled must reside on the same disk as the compiler. Removing the files mentioned above will insure that reasonable sized programs can be compiled.

Unique Features

The Aztec C SHELL operating system turns the Macintosh into a UNIX-like machine. In fact, the user does not have to touch the mouse when using the SHELL. One advantage of using the SHELL is that transfering from one program to the next is much faster than under the normal Mac operating system. Another advantage is the provision of some very handy UNIX utility programs such as MAKE, GREP, and DIFF. Programs can be written to access desk accessories and Finder driven applications can be run from the SHELL.

MAKE is very useful in the development of large C applications consisting of many seperately compiled modules. This

PROGRAMMING

C - a system for development

built which define the inter-relationship between the modules. When MAKE is run using this command file, it can automatically recompile any modules which have been modified since the last MAKE opperation, and create a new version of the application. GREP and DIFF are text search and comparison utilities. Users experienced with the UNIX vi editor will be quite comfortable with the Z editor. Z allows for the definition of macros, transfer of files, etc. Aztec C also allows Macintosh desk accessory programs to be written in C.

Hippo C provides a completely integrated development system. Once the user enters the Hippo C system, he can create, modify, compile and debug his code without ever leaving Hippo C. Hippo C also features the HOS operating system which provides a UNIX-like interface. HOS provides the option of using a command-based system instead of the pull-down menu and multiple window orientated " normal " Hippo C environment.

Mac C provides an environment which operates in the Apple defined standard user interface. The compiler is very well integrated with the MDS programs, as the author of Mac C is also the author of MDS, the compiler automatically invokes the assembler to create an object program in a single operation. The compiler, editor, assembler, linker, and EXEC all feature a TRANSFER menu which allows each program to start up another without returning to the Mac operating system. This helps to speed up development time.

The EXEC program executes batch command files. These command files specify a sequence of programs to be run, the input files to the programs, and the next program to be run depending on whether or not errors are encountered.

In the case of errors, the editor will be executed with two windows being opened: one containing the source program and one containing a file of error messages. The EXEC program bypasses the Mac operating system-in transferring from one program to the next and can create applications quite quickly. *Mac C* also allows desk accessory programs to be written in C.

Megamax C provides two unique features: a disassembler program and a code optimizer. The code optimizer will pass over the code as many as four times and can result in the generation of smaller and faster programs.

The Toolbox Interface

Aztec C provides complete support for all Toolbox routines. The Toolbox interfaces are included in multiple header files organized to reflect the sections of "Inside Mac". This means that Toolbox names can be changed at the user's discretion. Toolbox routines that are not in header files can be declared in the source code. Most of the Toolbox routine calls generate a "trap" instruction, while some involve calls to special conversion routines. The "trap" instruction, is that class of 68000 instructions which is used to invoke Toolbox routines. Routines are also provided for converting string data between the normal C format into the Lisa Pascal format expected by the Toolbox

Hippo C allows access to over 380 Toolbox functions. These include routines for supporting windows, handling text, the Quickdraw graphics commands, menus and events. in Mac terminology, an event is used to signal an action taken by the user, such as pressing a key, clicking the mouse or moving a window.

Mac C provides complete support for all Toolbox routines. It generates a single trap instruction for all Toolbox calls. C and Pascal sting conversion routines are also provided.

Megamax C also supports all Toolbox routines. A minor quibble with their interface routines: while the other compilers use the Toolbox routine names exactly as specified in the Apple "Inside Mac" document, Megamax Toolbox routine names are always in lower case.

All Megamax Toolbox calls use a conversion routine and functions for converting between C and Pascal string formats are provided.

Softworks C supports all Toolbox routines. Toolbox generate a single trap instruction and C and Pascal string conversion routines are provided.

This package contains an optimizing compiler, full floating point support, a 68000 assembler and additional utilities and program examples. Level 2 sells for \$399.95 and level 1 users can upgrade to level 2 for \$250.

Consulairs V2.0 of *Mac C* began shipping in March. Apart from bug fixes and minor cleanup, a floating point option will be available for \$90. The upgrade (without FP) will cost \$5 a disk.

Megamax V2.0 started shipping in late February. This upgrade is available free to existing customers who must return their distribution disks.

The new version makes the system look more at home in the Mac environment by adding pull-down menus, a batch facility and allowing intergration of desk accessories.

The new *Softworks C* release became available in March.

The Mac user interface has been rewritten and the documentation has been significantly and it will be available on-line.

Customer Support

In order to get a feel for the level of customer support available from the vendors, each was contacted for information about their system's support for a rather obscure Toolbox routine.

The original support contact at *Aztec* didn't really understand the problem and promised to have a senior technical person call back.

He called in less than two hours and answered the question in detail.

The *Hippo C* customer support department was manned by a knowledgeable support person who indicated that while *Hippo C* did not directly support the Toolbox routine in question, he would mail out a method for getting around this restriction.

Bill Duvall, the author of the Mac C compiler, answered the support call for

PROGRAMMING

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and besides answering that question, he explained how that particular Toolbox routine worked and mentioned an associated routine and their inter-relationship.

The Megamax C support group answered the question promptly and made sure that the latest version of the compiler was being used.

The Software C support group was just as knowledgeable and responsive as the others

While it is surprising to find such good support for microcomputer software it appears that these vendors are taking the business of development tools seriously.

The Obligatory Benchmark

It seems that no review of C compilers is complete without the results of at least the "sieve" benchmark. This program executes the "Sieve of Erathosthenes", an iterative procedure for generating prime numbers. While this algorithm only exercises the compiler's ability to handle array accessing and repetitive looping it does provide some useful information.

The "compile" times shown include the total time taken to actually generate an executable program and include compilation, assembly and linking. (See Figure 1) Each compilation was performed in as efficient manner as possible.

Copy Protection

Aztec C is copy protected. Copies of the software can be made, but when a copy is executed the original disk must be inserted in the drive. Hippo C is copy protected in the same manner but a non-copy protected disk is available for a small charge.

Mac C is originally delivered in copy protected format, but for the payment of \$25 and the signing of anadditional licensing agreement, they will provide a non-copy protected disk.

Neither *Megamax C* nor *Softworks C* is copy protected.

Conclusions

Aztec has C compilers running in a number of different hosted environments. As these development systems are ports of the same product, developers interested to or from another Aztec environment will find the Aztec C system to be an appropriate choice for the Mac. Those who prefer a UNIX-like interface

"The library and Toolkit source code can be used as an excellent resource for creating new customized routines and just reading them can teach one a lot about the Macintosh."

will also appreciate the Aztec system. The good documentation and support utilities round out a very nice package.

Hippo C is not really a complete software development system, and doesn't claim to be one. (The Hippo Level 2 package will provide a much more complete development environment.) It can, however, be very useful in quickly writing and debugging application "prototypes", which can later be ported

to another compiler. *Hippo C* is also a very good choice for the novice C programmer and for use in learning about the Macintosh and the Toolbox routines.

Mac C is a powerful software development system that intergrates extremely well with the standard Macintosh interface and MDS. The provision of the extensive library of toolkit routines will help the developer toquickly generate Mac applications. The library and Toolkit source code can be used as an excellent resource for creating new customized routines and just reading them can teach one a lot about the Macintosh.

Megamax C is excellent value for its price. It works well in the standard Macintosh environment and provides very good support.

[Editor's note: The following information arrived just before press time. It has been taken directly from the vendor literature or from telephone conversations and has not been verified.Two subsets of the Aztec system are also available. The Personal version costs \$199 and runs only in the SHELL environment. The Developer's version costs \$299. It does not include the UNIX utilities or the library source. Version 1.06D is now being shipped. One of it's features is that it "borrows" 10K from the screen memory for use by the system. Hippo C Level 1 V1.2 was shipped for review but unfortunately the disk was eaten by the UPS conveyor system and could not be replaced in time. The new features of this upgrade include: acess to serial ports, more access to the sound channels, more support for external hard disks and more sample programs. The new Level @ product is now available.

Sieve Compiler	of Eratosthenes Compile mm ss seconds	Benchmark to Execute	ests Total seconds
Aztec	1,22	6,45	88.45
Megamac	1.54	6.43	120.43
Hippo	1.25	55.67	140.67
Mac	3.09	9.82	198.82
Softworks	4.57	4.83	301.83

SOFTWARE

Newsroom

by Mark Sykes

Newsroom is brought out by a company called Springboard. It is a printer oriented program that attempts to mimic the layout of a newspaper. While this is a novel idea it does have its disadvantages.

Newsroom appeals most to the market that thought Printshop was a great idea. Like Printshop, Newsroom comes complete with stored graphics, 600 to be precise. The diagrams range from mice to men. While the size of the diagrams vary, the scaling of individual pictures is fixed. Each picture can be altered using the graphics tools. This is little compensation when the picture is a fraction too large.



Newsroom comes with a mini word processor. It has simple insert and delete codes such as ctrl-D for delete. Word wrap is automatic but lacks correct justification. While in the word processor only text can be entered.

Newsroom provides its owner with a good selection of graphic tools. There is the usual array of lines and dots to choose from, but one also gets to draw perfect circles, squares and rectangles. One can then fill these with one of ten various fillings. Unlike other graphic programs the fill patterns do not have colour.



Text can also be combined with graphics. Within the graphics or "photo" mode, editing of text is very limited. Insert is non existent and deletion is only possible by passing over the text with the space bar or an eraser.

To compensate for this there is a text editor.

Problems:

The biggest problem with the Apple II+'s answer to the Mac is that Newsroom is page (panel) orientated. Six or more panels plus a banner are required to make one page. Coordinating and aligning these panels can be a problem. Editing of text is adequate but not a pleasure to use.

RATING: EXCELLENT 90%

Review copy from Computer-1 Ph:398 2315



DISCO FRIDAY
There will be a DISCO at the School hall this Friday the 3rd of May. It will start at 6.00 and finish at 9.00
The cost is \$ 2.00 . Every person will receive a can of drink and a bag of chips included in the admission charge. There will be lucky spot prizes given away through the night. The Disco is for all primary children. Get the holidays off to an enjoyable start - COME TO THE FIRST DISCO in the new hall and make it a success. If it proves popular we may have more next terms.

IEW CHAMPION



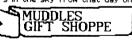
by Shane Obrien

On Friday night
the 26th of April
1985 Jeff Fenech
fought the
chappion of the
world a Japanese.
The fight was
pretty even until
the 4th round.
Jeff Fenech was
getting very
tough. In the 9th
round he punched
the champion hard
in the face. The
referee stopped

how the stars were jorned

By Matthew Geyer.

By Matthew Geyer.
Hundreds of years ago there
were no stars up in the sky.
The moon was all alone in the
sky. It was so dark that the
animals kept running into each
other. Then once up the animals
had an idea. The deer spoke up and said.
"If the birds fly up to the moon and chip
bits of the moon off with their beaks we
can have more light." The tiny minor birds
flew up and chipped bits off the moon. It
took them two weeks to do this. After a
while they flew back and dropped the
chips on their way back. There have been
stars in the sky from that day on.



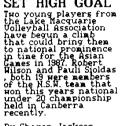
COME AND BROUSE







YOUNG CHAMPS SET HIGH GOAL



By Sharon Jackson.

SPORTS RACING Yesterday in the Melbourne Cup 2 horses Fozzy Bear and Kingston_Town collided. Both had to go to the vet after the accident.

KENNY WINS AGAIN

KENNY WINS AGAIN

Today at Coolangatta Grant Kenny that
famous iron man won the Coolangatta Gold
by 2 seconds. At one stage he was coming
last but his effort in the canceing gave
him the advantage to take the lead
After winning and seeing his fiancee eating
her muest bar Kenny was asked how he
felt. He replied "I feel like a Tooheys."
There were only 3
people who
finished the event
Two people were
taken by sharks
during the
sum. This was all
filmed for a movie
to be made about
the losers in the
race.



race





PROGRAMMING

DARTS

for two players

by Max Bird

This is an interactive program where two players can have a game of darts. The Apple will draw the lartboard in hi res graphics and keep track of all he scoring.

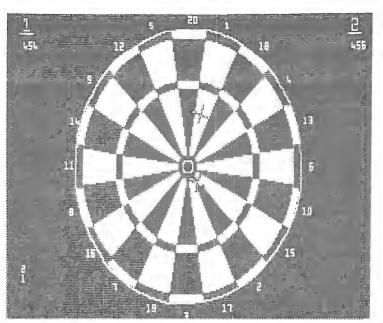
The game is not as easy as it appears because he cross hairs move constantly and so aiming is not too easy. If you want a really interesting jame, put a time limit between throws. This will speed up the game as well.

All the instructions are included in the program, so good throwing.

so good throwing. GOTO 1070 ?0.X1 = R:Y1 = 0:FL = 0FOR I = 1 TO 64:T = X1 * C -Y1 * S:Y1 = Y1 * C + X1 * S:X1 = T $\downarrow 0$ SX = X1 + X:SY = Y1 + Y IF FL THEN 70 50 50 HPLOT SX,SY:FL = 170 HPLOT TO SX,SY 30 **NEXT: RETURN** 30 CD = COS (.01):SD = SIN (.01)0): FOR TH = PI / 20 + ST TO 2 * PI STEP PI / 5:C = COS SIN (TH): FOR TG =(TH):S =TH TO TH + PI / 10.5 STEP .0 100 T = C * CD - S * SD:S = S * CD + C * SD:C = T110 HPLOT R1 * C + X, R1 * S + Y TO R * C + X, R * S + Y: HPLOT R 2 * C + X, R2 * S + Y TO RO * C + X, RO * S + Y : NEXT : POKE1024,65 + F:F = F + 1: NEXT: RETURN 120 X = 140:Y = 96:Z = 0:C = COS(.1):S = SIN (.1):PI = 3.1416:B = -16384130 R = 4: GOSUB 20:R = 86: GOSUB

140 ST = 0: HPLOT 10,13 TO 20,13:

HPLOT 260,13 TO 270,13



- 150 R = 54:R1 = 50:R2 = 85:R0 = 8 1: GOSUB 90 160 ST = PI / 10:R1 = 8:R = 49:R2 = 55:R0 = 80: GOSUB 90 170 DIM S(20),P(3),X(2),Y(3),T(3),SC(2,1),NAME\$(2)
- 180 PÓKE 232, Ó: POKE 233, 3: ROT= 0: SCALE= 1
- 190 X(1) = 10:X(2) = 260:Y(1) = 160:Y(2) = 166:Y(3) = 172
- 200 FOR I = 1 TO 2: FOR J = 0 TO 1:SC(I,J) = 501: NEXT : NEXT
- 210 REM
- 220 FOR I = 0 TO 20: READ S(I): NEXT
- 230 FOR I = 768 TO 875: READ J: POKE I,J: NEXT
- 240 FOR I = 1 TO 20:A = PI * I / 10:X = 140 + 93 * COS (A):Y = 96 + 93 * SIN (A):X\$ = STR\$ (S(I))
- 250 FOR J = 1 TO LEN (X\$):P = VAL (MID\$ (X\$,J,1)): DRAW P + 1 AT X,Y:X = X + 4: NEXT : NEXT : RETURN
- 260 POKE 16368,0: ROT = Z:X = 140:Y = 96
- 270 D = 1: IF RND (X) < .5 THEN D = -1
- 280 X = X + D * RND (X) * 3: IF X < 45 THEN X = 45
- 290 Y = Y + D * RND (X) * 3: IF Y < 2 THEN Y = 2
- 300 IF X > 235 THEN X = 235
- 310 IF Y > 190 THEN Y = 190
- 320 SCALE= 2: XDRAW 2 * (M1 = 1) + 3 * (M1 = 2) AT 15 + 250 * (M1 = 2),7: SCALE= 12

PROGRAMMING - DARTS

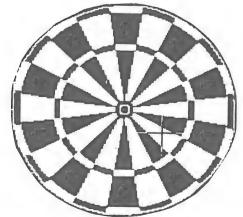
```
330
      XDRAW 11 AT X,Y
 340
      XDRAW 11 AT X.Y: IF AP AND M
      1 = 2 THEN GOTO 360
      IF PEEK (B) < 128 THEN GOTO
 350
      270
 360
      POKE
            -16368,0:L = PEEK (B
      ): IF L = 65 THEN Y = Y - 4:
       GOTO 270
      IF L = 90 THEN Y = Y + 4: GOTO
 370
      270
380
      IF L = 8 THEN X = X - 4: GOTO
      270
390
      IF L = 21 THEN X = X + 4: GOTO
      270
      IF L < > 32 GOTO 270
FOR A = 1 TO 3:A1 = PEEK ( -
400
410
      16336): NEXT
420
     REM
430 Y = Y - 96:X = X - 140: IF X =
      Z THEN TH = PI / 2 + PI * (Y
       < Z): GOTO 450
440 \text{ TH} = \text{ATN } (Y / X) + PI * (X < 0) + 2 * PI * ((X > 0) AND (
      Y < 0)) - PI / 20
450 R = SQR (X^2 + Y^2)
     IF R < 5 THEN S = 50: RETURN
460
470
     IF R > 4 AND R < 9 THEN S =
      25: RETURN
480
     IF R > 86 THEN S = 0: RETURN
490 I = 1 +
              INT (TH * 10 / PI)
500 S = S(I)
510
     IF R > 80 THEN S = 2 * S: RETUR
     IF R > 49 AND R < 53 THEN S =
520
     3 * S
530
     RETURN
540
     SCALE= 1: ROT= 0
550
     FOR I = 1 TO LEN (T$)
560 X = VAL (MID$ (T$,I,1)) + 1
570
     XDRAW X AT X(M1) + 4 * I.Y(M
580
     NEXT I
590
     RETURN
600
     SCALE = 1: ROT = Z:FL = Z:X =
      VAL (T\$): IF X > 40 THEN GOTO
     620
610 X = X / 2: IF X - INT(X) <
     .1 THEN T$ = STR$ (X):FL =
```

```
620
     FOR I = 1 TO LEN (T\$):X = VAL
      (MID$ (T$,I,1)) + 1: XDRAW
     X AT X(M1) + 4 * I.20: NEXT
630
     IF FL THEN ROT = 6: XDRAW 11
       AT X(M1) + 4 * I + 4.20
640
     RETURN
650 J = M: FOR M = 1 TO J: SCALE=
      3: ROT = 4
     XDRAW 11 AT PX(M) + 140, PY(M)
660
      ) + 96:T$ = STR$ (T(M)): GOSUB
     540: NEXT M: RETURN
     IF SC(2,1) - T > 180 THEN X =
670
     140:Y = 48: GOTO 770
680
     IF SC(2,1) - T > 100 THEN X =
     140:Y = 51: GOTO 770
690
     IF SC(2,1) - T > 61 THEN X =
     138:Y = 60: GOTO 770
700
     IF SC(2,1) - T > 40 THEN X =
     160:Y = 96: GOTO 770
710 S3 = (SC(2,1) - T) / 2: IF S3 - INT (S3) > .1 THEN IF S
     3 > 5 THEN X = 155:Y = 63: GOTO
     770
720
     IF S3 - INT (S3) > .1 THEN
     X = 150:Y = 12: GOTO 770
730
     FOR S4 = 0 TO 20: IF S3 = S(
     S4) THEN GOTO 750
740
     NEXT S4
750 \text{ PH} = \text{PI} * \text{S4} / 10 - \text{PI} / 20:R
      = 83
760 X = 140 + R * COS (PH):Y = 9
     6 + R *
               SIN (PH)
770 D = 1: IF
               RND (X) > .5 THEN
     D = -1
780 X = X + D * 4 *
                       RND (X): IF
      RND (X) > .5 THEN D =
790 Y = Y + D * 5 *
                       RND (X)
800
     RETURN
810
     FOR M1 = 1 TO 2:T$ =
                             STR$ (
     SC(M1,0)): GOSUB 600: NEXT
820
     POKE - 16302,0: POKE
                              - 163
     04.0
830
     FOR M1 = 1 TO 2:T = 0
     FOR M = 1 TO 3: IF M1 = 2 AND
840
     AP THEN GOSUB 670: GOSUB 33
     0: GOTO 860
850
     GOSUB 260
860 PX(M) =
              INT (X):PY(M) = INT
     (Y): SCALE= 3: ROT= 4: XDRAW
     11 AT PX(M) + 140, PY(M) + 96
870 \text{ T(M)} = \text{S:T\$} = \text{STR\$} (\text{S}): \text{GOSUB}
     540
880 T = T + S: IF T = SC(M1,1) AND
          > Z AND R > 80 THEN GOSUB
     S <
     650: GOTO 990 Australian Apple Review 39
```

PROGRAMMING - DARTS

- 890 IF T > = SC(M1,1) THEN PRINT CHR\$ (7): GOSUB 650: GOTO 9
 70
- 900 IF SC(M1,1) T = 1 THEN PRINT CHR\$ (7): GOSUB 650: GOTO 9
 70
- 910 NEXT M
- 920 SCALE= 2: DRAW 2 * (M1 = 1) + 3 * (M1 = 2) AT 15 + 250 * (M1 = 2),7
- 930 FOR M = 1 TO 300: NEXT M
- 940 FOR M = 1 TO 3: SCALE= 3: ROT= 4: XDRAW 11 AT PX(M) + 140,P Y(M) + 96:T\$ = STR\$ (T(M)): GOSUB 540: NEXT
- 950 SC(M1,0) = SC(M1,1):SC(M1,1) = SC(M1,1) T
- 960 T\$ = STR\$ (SC(M1,0)): GOSUB 600:T\$ = STR\$ (SC(M1,1)): GOSUB 600
- 970 NEXT M1
- 980 GOTO 830
- 990 FOR I = 1 TO 550: NEXT I: TEXT : HOME : VTAB 8: PRINT NAME\$ (M1)"WON...WELL DONE!"
- 1000 PRINT : PRINT "ANOTHER GAME ? Y/N?"
- 1010 GET T\$: IF T\$ = "N" THEN GOTO 1060
- 1020 IF T\$ < > "Y" THEN GOTO 1
- 1030 FOR M1 = 1 TO 2:T\$ = STR\$ (SC(M1,1)): GOSUB 600: NEXT M1
- 1040 FOR M1 = 1 TO 2:SC(M1,0) = 501:SC(M1,1) = 501: NEXT
- 1050 GOTO 1190
- 1060 HOME: END
- 1070 HGR: HCOLOR= 3: TEXT: HOME : PRINT TAB(10)"A P P L E - D A R T S"
- 1080 HTAB 10: FOR I = 1 TO 21: PRINT CHR\$ (96); NEXT: PRINT
- 1090 PRINT: PRINT "THE GAME IS 501 DOWN: FINISH ON A": PRINT "DOUBLE"
- 1100 PRINT : PRINT "PLAYED WITH ONE PLAYER VERSUS"
- 1110 PRINT "THE APPLE, OR TWO PL AYERS VERSUS"
- 1120 PRINT "EACH OTHER."
- 1130 PRINT : PRINT "AIM AS FOLLOWS:": PRINT : PRINT "A....U
 - Australian Apple Review 40

- 1140 PRINT : PRINT "Z....DOWN"
 1150 PRINT : PRINT "<-...LEFT"
- 1160 PRINT: PRINT "->....RIGHT, THROW WITH THE SPACE BAR"
- 1170 PRINT: PRINT: PRINT "PLEA SE WAIT WHILE I FETCH THE BO ARD"
- 1180 GOSUB 120
- 1190 AP = 1: HOME : VTAB 8: PRINT "ARE THERE TWO PLAYERS? Y/N?"
- 1200 GET T\$: IF T\$ = "Y" THEN AP = 0: GOTO 1220
- 1210 IF T\$ < > "N" THEN GOTO 1 200
- 1220 PRINT: INPUT "WHAT'S THE N AME OF PLAYER ONE? "; NAME\$(1)
- 1230 IF AP THEN NAME\$(2) = "APPL E": GOTO 1250
- 1240 PRINT: INPUT "AND THE NAME OF THE OTHER? "; NAME\$(2)
- 1250 PRINT: PRINT NAME\$(1)"PLAY
 S FIRST": PRINT: PRINT "PRE
 SS SPACE BAR TO CONTINUE"
- 1260 GET T\$: GOTO 810
- 1270 DATA 6,10,15,2,17,3,19,7,1 6,8,11,14,9,12,5,20,1,18,4,1 3,6
- 1280 ĎATA 11,0,24,0,32,0,39,0,4 6,0,53,0,59,0,66,0,73,0,79,0 ,87,0,94,0,35,44,53,54,62,39 ,4,0,36,183,18,45,28,4,0,37, 60,183,54,45,4,0,158,45,36,3 6,63
- 1290 ĎATA 6,0,49,62,56,36,44,0,39,44,181,54,63,4,0,53,62,39,36,44,53,0,82,36,36,63,6,0,37,60,55,54,46,37,4,0,39,44,53,54,62,39,0,128,48,54,222,128,40,45
- 1300 DATA 5,0,38,62,39,4,0



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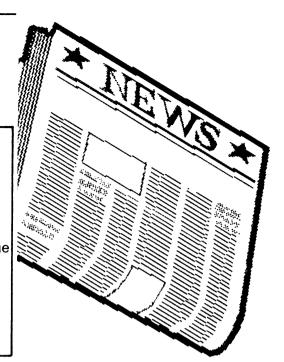
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There are many ways for you to be more competitive in the way that you go about your business. (The faint-hearted would call some of these ploys ruthless.)

But there is one way that allows you to improve your business efficiency, and give your kids a head start at the same time.

It's the new Apple IIc.

Apple IIc. The 8 pound heavyweight.

For such a powerful, capable machine, the Apple IIc is extremely compact.

The new Apple weighs just less than 8 pounds, half as much as computers with half its power. It has been designed to be the same size as a 3-ring binder, not a 3-ring circus.

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And in no time at all, young people will find themselves at the door of one of the most unusual libraries ever assembled, the Apple software library.

Even though there are new programs written for the Apple every day, there are currently over 2000 education based programs available.

At their own pace, with the new found

less in business tat the same time?

concentration that a computer creates, your children can take themselves on a private tuition course that covers virtually every subject on the school curriculum.

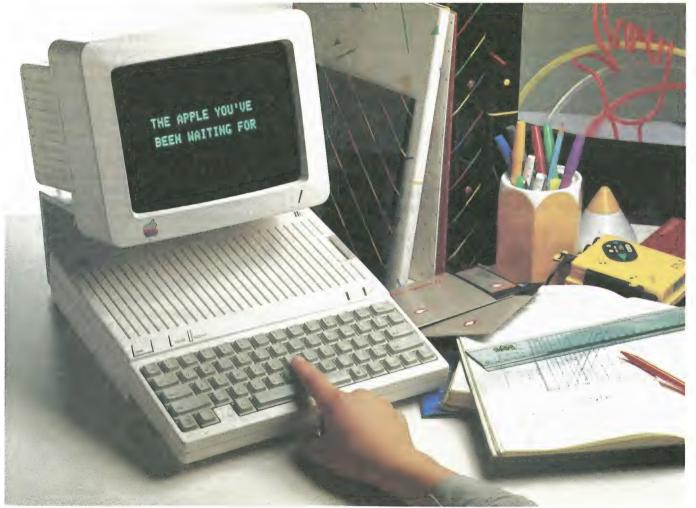
Whether they're learning to read music or a foreign language, your children will be enjoying the considerable advantages of a student to teacher ratio of 1 to 1.

Whatever the subject however, many people believe that familiarity alone with a

computer is going to be a tremendous advantage in the future of a young person growing up today.

Who knows, an Apple may give your kids such a head start, they may never even have to be ruthless in business.

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Reviews of basic, manual, encyclopaedic, robotic, and programmed books

by Gene Stephan

Title: Macintosh Microsoft Basic

Author: Rick Dayton Publisher: Prentice-Hall

Cost: \$34.95

Size: around 270pages
Format: 28 X 21.5cm
Available: Beagle CS

Here we go with yet another manual for all those people who have somehow obtained their Microsoft BASIC without one. I am sorry for being a little harsh, but there comes a time when one finds it difficult to sit down and read yet another text on the same piece of software. (The memory reminds me that last month there was 'Micosoft Basic for the Macintosh' also published by Prentice-Hall.)

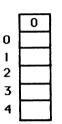
As a first impression, I felt the book assumed me to be a mite simple between the ears. For example, chapter one is entitled 'Understanding the Macintosh Computer' and tells us "the Mac computer system has three main parts: the mouse, the cabinet and the keyboard.... Like a real mouse, the electronic mouse has a long tail which is connected to the computer, is small enough to fit in the palm of your hand, and can nimbly scurry around your desktop." At this point I was about ready to turf this tree murderer into the 'good grief' pile.

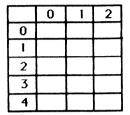
However, if the first 18 pages are ignored, the book does have many redeeming features.

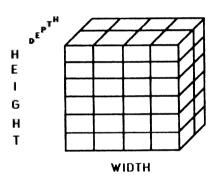
The simplicity of the first chapter carries on to the next where it becomes appreciated. Chapter two, 'Understanding Macintosh MBasic Concepts' is over 100 pages long and anyone working through reaches chapter 3 with quite a reasonable understanding of basic programming principles. The section on arrays is indicative of this (see figure 1).

In chapters 3 and 4, the tone changes again. Now we are into applying our basic principles to a real application with some real code. If you thought the application

Figure 1: One, two and three dimension arrays







100 DIM ROWS\$(26) 200 DIM RECTANGLE%(30,6),CUBE!(5,5,5)

Figure 2: MERGING DATA TO CREATE A NEW FILE

would be something simple or trivial, you would be wrong. It is a cash disbursements system which ultimately comes as five pages of tight code. I was surprised as many of the concepts were applied. Figure 2 shows one of the subroutines.

The remainder of the book is taken up with the Reference Guide and Appendices - about another 100 pages.

When I finished the book, I was not too certain as to how to react. Parts are horrible and treat the reader as a nong who has zero computing experience. Parts are enlightened, as the second chapter with simple explanations of sometimes complex concepts. Parts are quite advanced, as the code presented in the cash disbursements. Parts are stock text book as the reference guide. It seems the author has put in a little something for everyone.

As a final note, I must say Prentice Hall did a slightly naughty thing with 'Microsoft Basic for the Macintosh', reviewed in the last issue. It seems stock is not expected in Australia until September, as is also stock of 'MacPaint, Drawing, Drafting, Design'. I have received a number of calls from people wanting to get these books - that is the answer. I will now make sure books are available before the reviews are published or will make it quite clear when they are expected to be readily available. My apologies to those inconvenienced.

```
2200 REM ********* merge routine follows
2205 KILL "OLDFILE" NAME "NEWFILE" AS "OLDFILE"
2210 OPEN "NEWFILE" FOR OUTPUT AS #1: OPEN "OLDFILE" FOR INPUT AS #2
2215 OPEN "CONTROL" FOR INPUT AS #3
2220 INPUT #3,FILEITEMS,FILETOTAL#,OLDMO$
2225 CLOSE#3
2230 FLAG=1:F=0:I=1:TOTALITEMS=FILEITEMS+ITEMS:GRANDTOTAL#=0
2300 FOR X=1 TO TOTALITEMS
2305
        ON FLAG GOTO 2310,2320
2310
        IF F=FILEITEMS THEN 2350
2315
        INPUT #2,AC,CHECKNO,PAYEE$,AMOUNT#,MO,DAY
2320
        IF I) ITEMS THEN 2330
2325
        IF ACN(X(I)))=AC THEN 2330 ELSE 2350
2330
        WRITE #1,AC, CHECKNO, PAYEE$, AMOUNT#, MO, DAY
        F=F+1:GRANDTOTAL#=GRANDTOTAL#+AMOUNT#
2335
2340
        FLAG=1:IF F=FILEITEMS THEN AC=10000
2345
        GOTO 2365
        WRITE #1,ACN(X(I)),CHKND(X(I)),VEND$(X(I)),AMT#(X(I)),MONTH,DY(X(I))
2350
2355
        GRANDTOTAL#=GRANDTOTAL#+AMT#(X(I)):I=I+1
2360
        FLAG=2
2365 NEXT X
```

BOOKS

Title: Encyclopaedia of

Microcomputer Terminology

Author: Linda Gail and John Christie

Cost:

Publisher: George Allen and

Unwin \$12.95

Size: around 350 pages Format: 19.5 x 13 cm Available: Beagle CS

This is a great little book. I am always a little wary of dictionaries and encyclopedias aimed at specific subject areas. Too often the word you are desperately looking for just isn't there because the authors considered it too technical or not technical enough. This book is different. It is extremely thorough.

It is not easy to review such a book further than to say just that. There are however some nice touches.

For example, the main area is not clogged with fringe data. Here there are over 4,000 computer terms listed and defined. So, you can find out that is a String Oriented Symbolic Language, and as different from COBOL - Common Business Oriented Language - as chalk from cheese. Then there are the common words now with computer meanings such as 'crash - a situation in which the computer becomes misdirected or blocked due to a hardware or software malfunction. A head-crash refers to the accidental impact of the read/write headdisk drive head onto the disk surface.'

And no, the fringe data has not been overlooked. At the back of the book are 14 appendices - albeit small. These are: Barcode Glossary, BASIC Keyword Glossary, Codes, Color Codes for Electronic Components, Flowchart Symbols and Logic Flowchart, Logic Functions and Symbols, Logic Gates, Mathematical Formulae for Electronics, Metric Unit Prefixes, Music Synthesis Glossary, Number Systems, Schematic Symbols Used in Circuit Diagrams, Videodisk Technology and Glossary, and Wordprocessing Glossary. Figure 4 shows Appendix L.

The book certainly covers a great deal of the ground with good effect. My one main criticism was with the title. The book is excellent, however, I took offence at the word 'encyclopaedia'. There was no information on the 10,000-odd commonly used chips (over 60,000 all up), and I did not find PROLOG, a 4GL (fourth generation

generation language), so it is short of the definitive image an encyclopedia conjures up. Still, having said that, it is difficult to criticise in value for money and in the amount of information which is placed so conveniently at the fingertips.

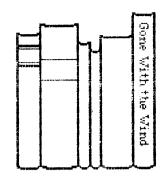
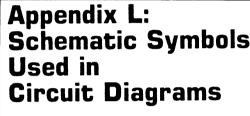
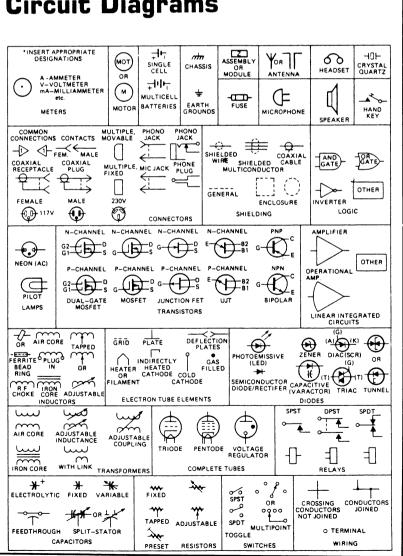


Figure 4





BOOKS

Title:

The Winning Programs

Author:

L Appell and

D Casabonne

Publisher: Prentice Hall

Cost:

\$20.95

Size:

around 160 pages 21.5 by 27.5cm

Format: 21.5 by 27. Available: Beagle CS

Winning Programs is not a book crammed with code as the name might imply. Rather, it is a scrapbook of the 1984 Apple Computer Clubs Competition in the US.

Launched in 1983, the Apple Computer Clubs program was aimed at creating an environment where school Apples would be put to extended use. The response to the program came from over 25,000 schools worldwide and the competition drew thousands of entries.

"Winning Programs" is a book about the finalists and their projects. Had the code been included, this would be a really great book. Without it, what we have is a book which is merely interesting.

The first chapter deals with the background to the contest, the second with a visit to Washington which was part of the finalists' prize and the third with the finalists themselves.

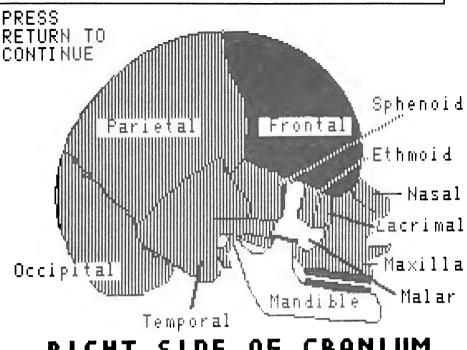
The format is LARGE. The pictures are large, the illustrations are large and even the text is suitable for younger children to tackle.

The fourth chapter is the most interesting, detailing the nature of the finalists' projects. From these 50 odd pages many ideas can be gleaned, but I was very disappointed at the number of program lines. These total to no more than 30 and really leave you wanting more. Particularly as there are plenty of pictures of interesting screens. I have included some of these in the figures.

The final three chapters go through presentation to the winners and list the projects of the semi-finalists. Again there are plenty of ideas for the reader but no code.

A nice aspect to the book are the short asides complementing the text. The following is an example:

"Do you know where the word debug comes from? some people say its use began about 40 years ago when the big Mark I calculating machine at Harvard

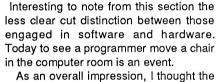


RIGHT SIDE OF CRANIUM

⑤ W. HAIT 83

Anatomy project using Apple'sPascal graphics editor

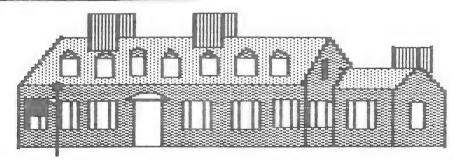
developed a problem. Programmers worked all day trying to figure out what was wrong. The Mark I was an enormous machine with operations performed by mechanical parts that were controlled electrically. It had about 3,000 relays. Finally after searching and searching, the programmers found a dead moth stuck in one of the parts. They wrote into the log, The Mark I was debugged today'."



As an overall impression, I thought the book would be excellent for those who participated or were in some way associated with the event. As a book which is a 'must', I would think not. Certainly it would not be out of place in a school library - the language is simple and there are plenty of pictures - but for the run of the mill user, well . . .



Houses in Williamsburg, Virginia, drawn by Elizabeth Minor with the help of a Koala Graphics Tablet for a state history project



BOOKS

Title: Are Computers Alive?

Author: Geoff Simons

Publisher: Corgi Cost: \$7.95

Size: around 220 pages Format: 19.5 by 12.5cm

What motivates people to write books? I always thought it was to fill a need - a topic not covered by the manuals, a new angle on a problem or a failing bank balance. In the case of "Are Computers Alive?" I am totally mystified.

The book is 200 odd pages of waffle. In some cases waffle is bearable as you can get some laughs or at least realise there are life forms out there with lower intelligence getting their words into print. In this case, little mirth can be derived and the author certainly is no fool. He is the chief editor at the National Computing Centre in the UK and has a string of works to his credit.

Are computers alive? I would have thought the answer at this point in time would have been reasonably obvious. Perhaps someone has had a double dose of Dr Who and believes Daleks really do exist.

The book starts off by attempting to define the term "alive". The biological definition requires a living thing to 1, metabolize, 2, grow (age), 3, reproduce. This means that living things have bodies capable of transforming substances such as food, water and air into energy, or into themselves, within a limited life span. And they can produce little ones by whatever means given them.

It is easy to argue that robots - (computers with the ability to perform manipulative tasks) can transform substances such as electricity into energy. It is also plausible they will ultimately wear out and "die", but the reproduction aspect could be a stumbling block.

Not to Geoff Simons. To him the robot on the production line making another robot is an act of reproduction. Those who would say the robot has been programmed to do this task are greeted with the following gem, "zoo pandas, they don't make much headway without having a man in constant attendance", and many flowers require insects to complete their reproductive cycles.

Does this mean our robot is alive in a

way similar to a panda or a petunia? No.

Firstly, Simons attacks the definition using Turing's argument:

Q: Please write a sonnet on the subject of the Forth Bridge.

A: Count me out on this one, I never could write poetry.

Q: Add 34957 to 70764.

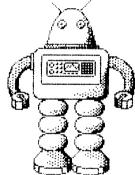
A: 105721.

Q: Do you play chess?

A: Yes.

and so on. Now, if after a sufficient number of these questions one is unable to tell the difference between who is the human and who is the machine, then there is no difference.

Having accepted such a definition, the book then continues to reinforce the stand that a robot is not only the equal of a human, but also the better. The final lines of the book are "Can a computer stand for parliament? What rights should a robot have? Would you let your son (or daughter) marry a machine? Perhaps we should start asking - and answering - the questions now. Before they are answered for us by the infinitely superior creatures that "machina sapiens", will become."



Yes, I felt annoyed by the book. Not that human intelligence needs to be stood up for - after all we sapiens will probably be so intelligent we will destroy ourselves and leave the machines - but that robot intelligence mimics human and therefore will be bound by the same constraints. For example our knowledge comes from our culture, our society, our scientific endeavours. It has accumulated. We impart some of this to computers. However, in order to be "smarter" than us, they will need to have their own culture, society and science. When they do they will no longer be comparable to us - just as we cannot say we are "smarter" than an ant, because we do not know what constitutes intelligence in that being.

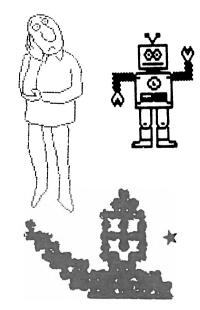
constitutes intelligence in that being.

Is the book totally without merit? I think not

Some of the information used to justify the arguments is interesting. When talking about early robots, "A curious tale is also associated with the name Albertus Magnus (1204-72) who is said to have manufactured a life-sized animated servant. In one version of the story Thomas Aguinas destroyed the automaton when he met it in the street, believing it to be the work of the devil. The creature was supposed to have been made of metal, wood, glass, wax and leather. It closely resembled a human being, and is said to have been able to talk and open the door for visitors. Roger Bacon (1214-94) spent seven years manufacturing a speaking head. And Leonardo da Vinci (1452-1519) made an automatic lion in honour of Louis XII: as Louis entered Milan, the lion walked towards him, opened its chest with a claw, and pointed to the fleur-de-lis coat of arms of France."

Plus, there is a good section on robots in industry and a comprehensive set of references up to 1982.

I dare say if you are feeling emotional about your computer or you have some spare cash you don't know what to do with, then you'll love this book. To my mind, it's a waste of time primarily because Simons really does believe in what he's saying. This gives a serious treatment of what could better have been treated lightly.



Australian Apple Review 47

UNMITIGATED GALL

The Worm in the Apple

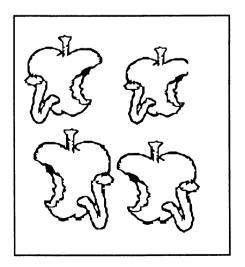
It is more than somewhat interesting to see Apple in the United States have announced a loss in the last quarter, which is the first time they have announced anything except for a fat profit. This Worm accepts, of course, exactly what the President John Sculley says about this loss being caused by the closing of three factories and the firing of 1,500 employees. But this Worm, being of a suspicious turn of mind, thinks there may be more to this story than meets the eye.

Note first the amazing Wozniak has shot through to pursue his interests in other areas. And, let this obsequious Worm point out to you Steven Jobs is no longer actively involved in the day to day running of the company.

Which means the man in charge is now ex-Pepsico executive John Sculley.

This Worm probably has a low mind, but if he was in Sculley's shoes he would woof that loss up to its highest possible level in the sure and certain knowledge that the following quarter would show a profit.

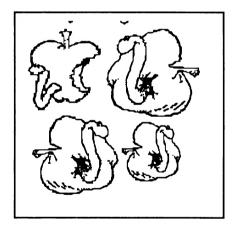
One which would be compared against the previous loss and the result would be



applause all round from the financial press for Sculley, a sharp lift to Apple's currently depressed share prices and a substantial bonus for the aforementioned Sculley at the next shareholders' meeting.

If I were in Sculley's shoes that is precisely what I would do.I am accepting small bets the next shareholder's meeting for Apple will be full of good things.

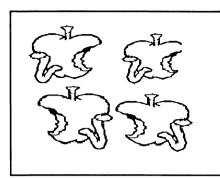
Wait and see if what I forecast is not the truth.



Mark you, if Sculley is really serious about improving the situation in export sales he should listen to the worrying take that has been recounted to me by my Chinese cousin, Wong Worm.

It appears that Apple appointed a new distributor for the whole of the People's Republic of China, where there are over a billion or so people. To do this they removed the agency from Gilman's in Hong Kong who had a full time Mandarin speaking American selling his heart out and gave the exclusive rights to a company based in Singapore.

Wong Worm would have said this was the strangest appointment since Caligula made his horse pro-Consul if Wong Worm had a classical education. As he did not



he merely restricted himself to asking whether Apple's export department had lost their collective minds and were repeating their famous feat of legerdemain and presdigitation when they gave the sole right to Hong Kong and Australia to the flight engineer of an airline - who retained his flying job while he ran the agency. This you find difficult to believe? So does this Worm. But it is sadly true.

Apple's export department works on the basis the world ends in Hawaii and anent their decision I can only quote the Attorney General of Hong Kong, Michael Thomas, who on another matter said, "I can only conclude it was either collusion, complete ignorance or a cock-up."

Here is the biggest potential computer market in the world, where every computer company with any pretensions to seriousness has opened at least a representative office. And Apple have given the exclusive rights to this market to one company which they do not own which is based in Singapore. Those of you who are not students of geography may care to be reminded Singapore is not part of the People's Republic of China. Not while Lee Kuan Yew is in charge

You may have a word to describe this latest action of Cupertino management. But words like that have no place in a family magazine.



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- "in many ways better than a dedicated word processor." The Australian 31/3/84
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- "highly recommended." Softalk Jan 84
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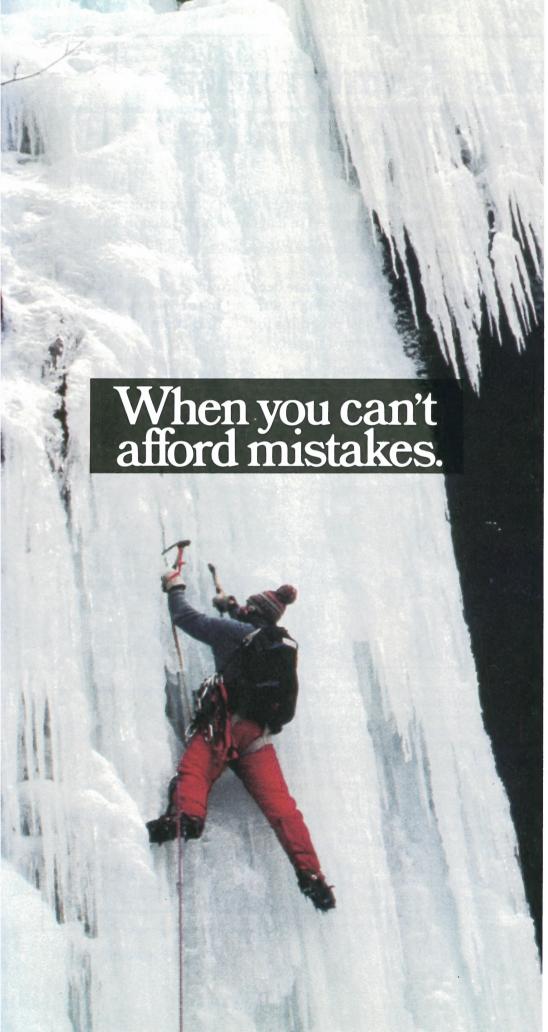
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